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The profitable integration of cropping and livestock in Southern Australia

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Abstract

Mixed enterprise (cropping and livestock) is a common production system in southern Australia. It is often adopted on the assumption that diversification is beneficial. Mixed enterprise however is a more complex production system to operate. This potentially increases internal management risk which can offset the benefit of diversification. Based on this, there was a need to identify, understand and communicate the principles supporting the profitable integration of mixed enterprises in different agro-ecological zones in southern Australia.

This project identified the key profit drivers through the collection and analysis of 100 multi-year benchmarking datasets from mixed enterprise businesses in southern Australia (production years 2014–2016).

The project was driven from the agro-ecological zone level to ensure regionally specific data and outcomes. The applied project methodology explored different environmental and enterprise characteristics that are unique to each zone.

Successful integration and increased business performance is driven by four primary profit drivers; gross margin optimisation, the development of a low cost business model, people and management and the management of risk.

A consistent message from the project is that there is a large gap in financial performance between the top 20% businesses and the remaining 80% businesses in each agro-ecological zone. There is internal capacity for many mixed enterprise producers to increase profit from the resources they currently manage.

This project produced nine management guidelines and factsheets. Each document was tailored to local agro-ecological zones.

Executive summary

Mixed enterprise (cropping and livestock) is a common production system in southern Australia. It is often adopted on the assumption that diversification is beneficial. Mixed enterprise however is a more complex production system to operate. This potentially increases internal management risk which can offset the benefit of diversification. Based on this, there was a need to identify, understand and communicate the principles supporting the profitable integration of mixed enterprises in different agro-ecological zones in southern Australia.

'The profitable integration of cropping and livestock in southern Australia' project aimed to define the primary profit drivers, in mixed farming businesses, that optimised the available synergies between cropping and livestock enterprises.

The project was completed by a collaborative project team of four consulting organisations and the project outputs and findings were driven from the agro-ecological zone level. A minimum of three years of financial and production information from 100 mixed farm businesses, over nine agro-ecological zones in southern Australia, was collected and benchmarked (production years 2014–2016). The data was then analysed to identify the top 20% businesses, by considering return on equity and return on assets managed. During the data collection phase, producers completed a skills audit to establish their level of knowledge in regard to each of their enterprises. The risk analysis tool, @Risk, was utilised to model the risk profile of top 20% businesses compared to the remaining 80% of businesses. A qualitative survey was also undertaken with ten producers per state to ensure a good cross section of the national sample. This survey was used to explore the management traits that were common among successful mixed farming managers.

Four primary profit drivers were previously identified through the Grains Research and Development Corporation (GRDC), 'The integration of technical data and profit drivers for more informed decisions', project. 'The profitable integration of cropping and livestock in southern Australia' project was a progression of the GRDC project with a stronger focus on mixed enterprise. The project validated that the same four primary profit drivers are applicable to mixed enterprise and explored the unique performance metrics that are relevant when integrating cropping and livestock enterprises. The project explored the underpinning principles of successful integration and strong long-term financial and production performance in mixed farming businesses. Just as the GRDC project found, this project reinforced that all four primary profit drivers must be implemented in a balanced manner to maximise profitability. If one or more of the primary profit drivers is neglected, then whole of business profit will suffer.

There were a range of secondary and tertiary profit drivers identified that influenced and assisted in driving whole of farm business performance. The secondary and tertiary profit drivers support the primary profit driver framework. The four primary profit drivers that are driving long-term financial performance were identified as:

1. Gross margin optimisation
   This is a measure of operational efficiency and is influenced by income generation and disciplined variable cost control. It is driven by a number of secondary and tertiary profit drivers including but not limited to:

   a. total farm income
   b. crop agronomy
   c. timeliness of operations
   d. turn-off weight of young stock
   e. adult fleece value
   f. reproductive rate
   g. grazing management
   h. variable cost control.
2. Low cost business model
   This is influenced by a farm's structural efficiency and reflects the overhead cost structure of the business. The two largest overhead costs in a mixed farming business are the cost of owning machinery (depreciation and interest) and employing labour (whether family or non-family). How well these resources are utilised drives the low cost business model profit driver.
3. People and management
   Successful management of a mixed enterprise farm business is driven by the effective management of people and the capability of the management team within the business. It significantly influences the profit outcome of the business as it takes a unique skill set to optimise gross margins while operating a low cost business model. People and management is driven by maximising team performance through adaptable and well thought out operational plans and disciplined implementation.
4. Risk management
   Resilient businesses can incur a production shock and maintain suitable levels of financial performance. These businesses are examples of low risk, high margin agriculture. This is achieved through eliminating internal management risk via the development of simple, effective and efficient work systems and careful attention to key profit drivers. Successful managers focus on what they can control to add profit margin and reduce long term cost of production.

It was identified that there was a significant gap in financial performance between the top 20% and the remaining 80% of producers. This gap was attributed to stronger implementation against the four primary profit drivers, rather than an increased knowledge base. The project found that closing this performance gap is within the control of business managers.

From the project findings, nine management guidelines and nine factsheets were produced. Each document was tailored to the nine specific agro-ecological zones that the project covered. Each output identified the four primary profit drivers of successful integration and highlighted the characteristics and key management traits of the successful top 20% producers. 'On farm actions' were also included in the management guidelines as next steps for workshop attendees to implement in their own businesses. The management guidelines were extended via facilitated workshops in each region. The factsheets present a summary of key messages for each zone.

The project achieved an excellent level of producer and advisor engagement. Eight focus groups were undertaken with producers who contributed to the project. 275 producers and 123 advisors attended one of the 22 workshops during the extension phase. The high engagement levels were supported by strong workshop satisfaction scores, averaging 8.6 out of 10 nationally. With 398

producers and advisors engaged, through this project, there has been a high level of participant satisfaction and value achieved. The project exceeded extension targets.

To continue the momentum of this project, there is an opportunity to build a long-term data set for mixed enterprises in southern Australia. Producers who were involved in this project expressed interest in continuing to benchmark their businesses. This would go a long way to increase industry understanding of mixed enterprise performance and provide longer-term trends that support learnings from this project. To extend the legacy of the project, feedback from the extension phase of the project suggests that further workshops or a Supported Learning Project (SLP), under MLA's Profitable Grazing Systems (PGS) program, would be a worthwhile next step. A SLP would continue to share the learnings of the project and enable producers to implement the skills to take them towards being a top 20% producer.

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1 Background

1.1 Project summary

The integration of cropping and livestock plays an important role across many farm businesses in southern Australia. The added complexity of managing multiple enterprises requires careful management to optimise performance. There is a need to integrate cropping and livestock enterprises in a manner whereby they become complementary rather than competitive. Poor integration can result in enterprise conflict that compromises overall financial performance. There was a need to identify and communicate the critical success factors for the effective integration of cropping and livestock in different agro-ecological regions.

This project aimed to define the primary profit drivers in mixed farming systems that optimise the available synergies between cropping and livestock enterprises. The project methodology involved robust benchmarking data collection, a skills audit and the application of a risk analysis tool to understand the risk profile of the businesses. A qualitative survey process was undertaken to explore the management traits that are common within successful mixed farming systems.

This national project identified where profit can be increased via targeted gross margin optimisation, developing a low cost business model, people and management and the management of risk. The project found that it is the implementation of all four primary profit drivers that resulted in the most profitable outcomes; and greater performance from an existing resource base developed more resilient farming businesses. If one or more of the primary profit drivers is neglected, then whole of business profit will suffer.

A consistent message from the project is that there is a large gap in financial performance between the top 20% businesses and the remaining 80% businesses in each agro-ecological zone. There is internal capacity for many mixed enterprise producers to increase profit from the resources they currently manage.

Nine management guidelines and nine factsheets were produced. Each document was tailored to an agro-ecological zone. The management guidelines were tested via focus groups and then extended via facilitated workshops.

1.2 Benefits to a sheepmeat and/or grassfed beef producer

The key benefits of this project to a sheepmeat and/or grassfed beef producer include the following:

- Defining robust benchmarks in integrated cropping and livestock enterprises, including both financial and production indicators and targets
- Developing on farm actions which are linked to achieving stronger levels of financial performance. This will assist with prioritising implementation as well as training and skill development across a team
- Identification of the critical success factors and risks to be managed when successfully integrating cropping and livestock
- Gaining insights into the influence of enterprise mix on the overall risk profile of a farm business

- Understanding the synergies which allow the integration of cropping and livestock enterprises and successfully integrating the two by optimising win-win outcomes without compromising overall performance
- Ability to increase overall profitability through greater understanding and implementation of the key profit drivers in a mixed farming system business
- Developing businesses which are more resilient against climate variability and business and production shocks.

1.3 Previous research and significance

The profitable integration of cropping and livestock in southern Australia project was a progression from the Grains Research and Development Corporation (GRDC), 'The integration of technical data and profit drivers for more informed decisions', project that was led by Rural Directions Pty Ltd. This project explored the key profit drivers in the 14 major grain growing agro-ecological zones, nationally, and provided insights into the regions where livestock had the potential to increase profit. It identified a divide in financial performance between the top 20% of farming businesses and the remaining balance. The top 20% have a capability to generate long-term operational returns in the vicinity of 8% per annum. This is a healthy and sustainable place to be, as it represents an operational return that is greater than the cost of capital. The average operational return across benchmarking datasets, in southern Australia, was often closer to 3%. This is challenging as it is below the cost of capital and represents lower margin, higher risk agriculture. These findings demonstrated that there is internal capacity, in many farming businesses, to leverage better levels of financial performance. The business risk profile of the top 20% was also measurably lower, demonstrating that low risk, high margin agriculture is possible.

Southern Australia experiences extremely variable climatic conditions and this variability has increased in recent years. Increasing variability in climatic conditions increases the volatility of returns and has an influence on future enterprise mix. Managing such variability requires the development of resilient businesses that have a capacity to absorb and respond to production shocks. It was identified, in some agro-ecological regions, that there is an increasing role for livestock to assist with the management of climatic risk. Integrating livestock into a cropping business, however, needs to be implemented in a manner which doesn't compromise gross margin optimisation or long-term profitability.

The interaction of profit drivers is the key to unlocking farm business potential. With the added complexity of a mixed farming system, this project took the recently established profit driver framework from the GRDC project and was able to contextualise and demonstrate that it applied equally to mixed farming businesses. It aimed to document how successful integration of cropping and livestock can enhance rather than compromise whole of business performance in some regions.

The business case behind this project was around becoming 'data rich', in regard to mixed farming enterprises, and developing an understanding of the unique considerations and skill sets required in these businesses to achieve strong results. This would be difficult to understand from simply analysing cropping focused datasets or livestock focused datasets. There was a need to collect and analyse a true mixed enterprise dataset.

This project has significant scope to increase producer confidence in regard to the successful integration of livestock and cropping. The practical project outputs have the potential to aid decision making and implementation on farm.

2 Project objectives

2.1 Research question

What are the unique profit drivers, in mixed farming systems, and how are the best managers integrating cropping and livestock enterprises to generate stronger business performance?

2.2 Outcome

By June 2018, a minimum of 100 mixed farming system producers and 10 advisors have the tools and knowledge to understand what is required to successfully integrate livestock and cropping businesses, in the southern Australia states of SA, NSW, Victoria, WA and Tasmania.

2.3 Objectives

1. By 1 April 2017, 100 datasets, involving a minimum of 3 years of consecutive data per dataset, have been collected and analysed. Skills audits will be undertaken during the data collection process. In addition, 25 qualitative surveys completed across a range of producers. Data analysis complemented with the application of a risk assessment tool and profit drivers identified.
2. By 31 October 2017, outputs to be tested with focus groups in each area prior to workshop roll out. The purpose of the focus groups will be to test and refine the project outputs.
3. By 31 October 2017, a management guideline has been developed which identifies how producers can incorporate the project findings into their own businesses in a strategic manner.
4. By 1 April 2018, 2 x half day workshops per agro-ecological region to be delivered. There will be 18 workshops in total to extend the key project messages.

3 Methodology

To create a robust analysis and leverage from local knowledge and insights, a collaborative national project team was formed. This enabled the outputs and findings of this project to be driven from the agro-ecological zone level while retaining national significance. The project team included:

- Rural Directions Pty Ltd (lead organisation) – South Australia and New South Wales
- RM Consulting Group Pty Ltd (RMCG) – Victoria
- Macquarie Franklin – Tasmania
- Farmanco Management Consultants – Western Australia.

Below is a summary table of the tasks undertaken in this project. Each task is linked to the related project outputs. All outputs for this project are listed in appendix 8.2.

Task/Activity	Related Output
Skills audits were developed and tailored to each agro-ecological zone; and distributed to project partners to undertake with data contributors.	1
SnapShot™ Premium data input sheets were distributed to project partners. SnapShot™ is a customised benchmarking database system developed and owned by Rural Directions Pty Ltd.	
A minimum of three years of financial and production data was collected from 20 mixed farming businesses (datasets) in each agro-ecological zone.	
The skills audit was completed by each mixed farming business during the data collection process.	
All data was checked for integrity and any required updates made.	
All data was analysed to identify the primary profit drivers and the top 20% producers by return on equity (ROE) or return on assets managed (ROAM) for each agro-ecological zone.	
A qualitative survey was developed to understand more of the decision making and production practices behind the data.	
A project partners meeting was held in Adelaide, August 2017, to discuss interim project findings, outputs for each agro-ecological zone and next steps. From this meeting the principle profit drivers were determined.	
Ten producers per state (50 in total) were selected, to ensure a good cross section of the national sample, and undertook the qualitative survey.	
@Risk statistical analysis tool was used to analyse and graph the risk profiles of the top 20% producers vs the remaining 80% of producers.	
Focus groups were designed and delivered to test the outputs and findings of the project with producers who had contributed data to the project.	2
One management guideline per agro-ecological zone was produced by each of the project partners to capture the key messages. A total of nine were produced.	
For each agro-ecological zone, a case study, reinforcing the high impact messages from the project, was developed and incorporated into the management guidelines.	
Management guidelines (Draft 1) were submitted to MLA early January 2018 for editing and formatting feedback.	
Feedback and consistent monitoring and evaluation data was obtained from each focus group for consideration during workshop design and session planning process.	
Management guidelines (Draft 2) were submitted to MLA mid-February 2018 for editing and formatting feedback.	
Management Guidelines were approved (February 2018 - SA and NSW, March - Victoria and WA, April - Tasmania) to be extended via facilitated workshops.	
Workshops for each agro-ecological zone were designed, and presentations finalised and approved.	3
Promotional support for workshops was provided via the MLA Communications team, and project partners promotion to local networks.	
Workshops were delivered in each agro-ecological zone from February-April 2018, engaging mixed farming producers and advisors	
Consistent monitoring and evaluation data was collected and collated from each workshop.	
Four-page factsheets were produced for each agro-ecological zone, designed to present the key findings of the project and ensure the ongoing legacy of the project messages.	

In addition to these activities, there were many teleconferences and email updates between the project team.

4 Results

4.1 Project outputs

4.1.1 Management Guidelines

Each project partner produced a management guideline (Appendix 8.3) for each of their agro-ecological zones. The management guidelines presented the four identified primary profit drivers of successful integration (discussed in Section 5.1) and highlighted the characteristics and key management traits of the successful top 20% producers. Inclusion of 'on farm actions' presented 'next steps' for attendees of the workshops to implement in their own business.

Each management guideline reinforces consistent national messaging while tailoring some minor aspects for local conditions. This local focus ensures the management guidelines are high value and relevant.

The management guideline was developed as a facilitated resource to be presented and supported via workshop delivery. In their current form the management guidelines are not suitable for publication on the MLA website or any other non-facilitated format.

4.1.2 Factsheets

Each project partner produced a four-page factsheet (Appendix 8.4) for each of their agro-ecological zones. The factsheets presented the key messages of the project in a summarised format.

Given this format, the factsheets are suitable for publication on the MLA website or as part of a MLA publication such as Feedback Magazine. If further extension is undertaken, the factsheets could be utilised as a promotional tool.

4.1.3 Focus groups

One focus group per agro-ecological zone was presented by the local project partner. A total of 8 focus groups were undertaken.

Mostly working with producers who contributed data, the focus groups validated the profit driver framework, key benchmarks and the structure of the workshops prior to the rollout phase. This testing ensured the workshops and management guidelines were high quality and practical for producers.

The focus group evaluation data is discussed in section 5.3 and can be found as appendix 8.5.

4.1.4 Workshops

Two half day workshops were presented, per agro-ecological zone, by the local project partner. In total, 22 workshops and one advisor briefing were presented, engaging 275 mixed systems producers and 123 advisors.

The workshops aimed to:

1. Share the key insights into the most profitable mixed farming (cropping and livestock) businesses across southern Australia
2. Build producer knowledge of the primary profit drivers and identify where there are opportunities in their own business to enhance profitability
3. Develop individual on farm action plans that identify areas for improvement.

The workshops aimed to achieve the following learning outcomes:

1. Understand the performance of top 20% producers in their local region
2. Build knowledge and understanding around the primary profit drivers that really make a difference in cropping and livestock enterprises
3. Identify the management traits of a top 20% producer and understand some of the on farm actions that may assist to improve performance.

Of all participants, 99% reported that the workshop had met the above objectives.

Workshop evaluation data is discussed in section 5.4 and can be found as Appendix 8.6.

4.2 Project engagement

4.2.1 National engagement

- Mixed enterprise producer and advisor engagement with the project was strong
    - 8 focus groups and 22 workshops were delivered to make a total of 30 extension activities
    - There was an excellent level of producer engagement at the workshops. A total of 275 mixed enterprise producers were engaged nationally. Target was 100
    - The total number of advisors engaged was 123. Target of 10
- Focus groups
    - 8.5 out of 10 average score for value nationally
- Workshops
    - 8.4 out of 10 average score for value nationally
    - 8.6 out of 10 average score for satisfaction nationally.

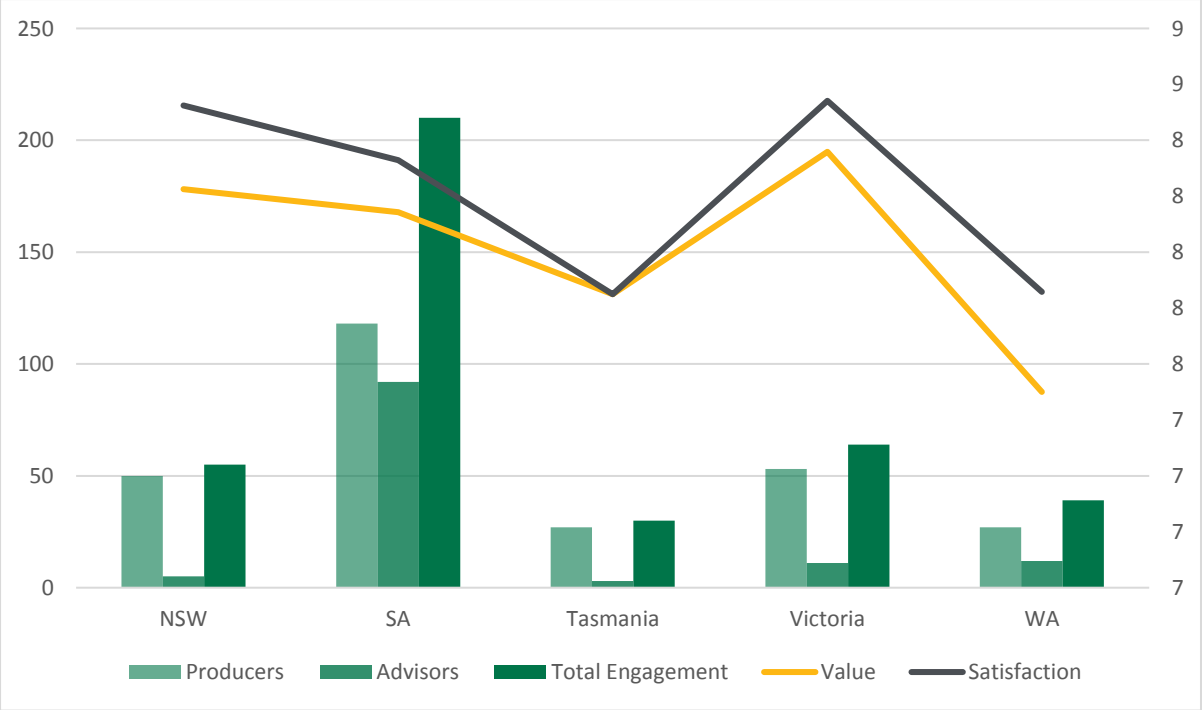


Fig. 1: National workshop engagement, value and satisfaction summary by state

4.2.2 New South Wales – Central West (Rural Directions Pty Ltd)

- One focus group and one workshop were delivered in this agro-ecological zone
- 8.8 out of 10 - average focus group value
- Workshop
    - 8.7 out of 10 average for value
    - 9.0 out of 10 average for satisfaction.

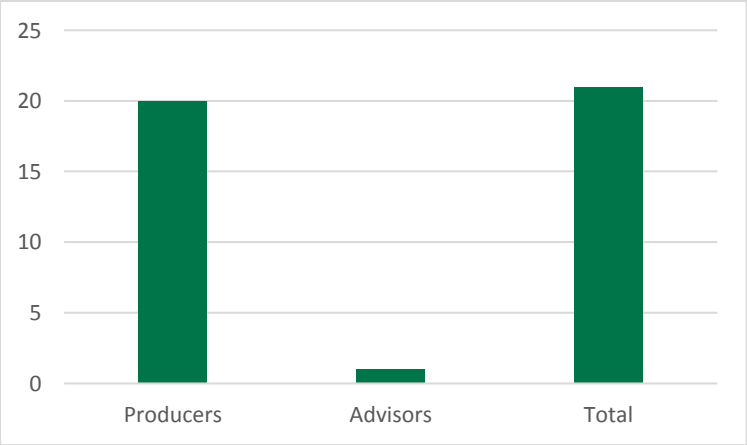


Fig. 2: NSW – central west engagement numbers

4.2.3 New South Wales – South West Slopes (Rural Directions Pty Ltd)

- One focus group and two workshops were delivered in this agro-ecological zone
- 9.3 out of 10 - average focus group value
- Workshop
    - 8.6 out of 10 average for value
    - 8.9 out of 10 average for satisfaction.

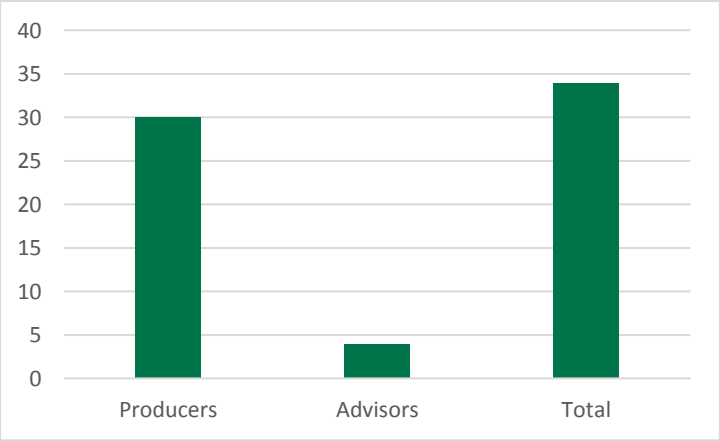


Fig. 3: NSW – south west slopes engagement numbers

4.2.4 South Australia – High rainfall zone (SA Mid North Lower Yorke Eyre) (Rural Directions Pty Ltd)

- One focus group, six workshops and one advisor briefing were delivered in this agro-ecological zone
- 8.8 out of 10 - average focus group value
- Workshop
    - 8.6 out of 10 average for value
    - 8.7 out of 10 average for satisfaction
- The advisor briefing included advisors from SA, Victoria and NSW
- Advisor briefing
    - 7.8 out of 10 average for value
    - 7.8 out of 10 average for satisfaction.

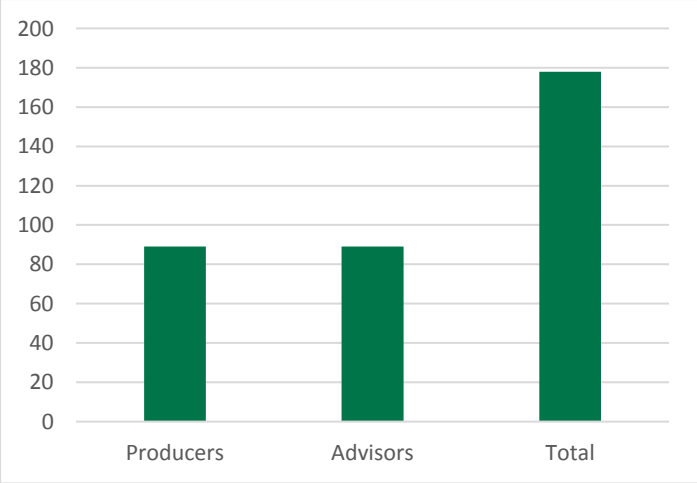


Fig. 4: SA – high rainfall zone engagement numbers

4.2.5 South Australia – Medium rainfall zone (SA Mallee and Upper Eyre Peninsula) (Rural Directions Pty Ltd)

- One focus group and one workshop were delivered in this agro-ecological zone
- Workshop
    - 8.6 out of 10 average for value
    - 8.9 out of 10 average for satisfaction.

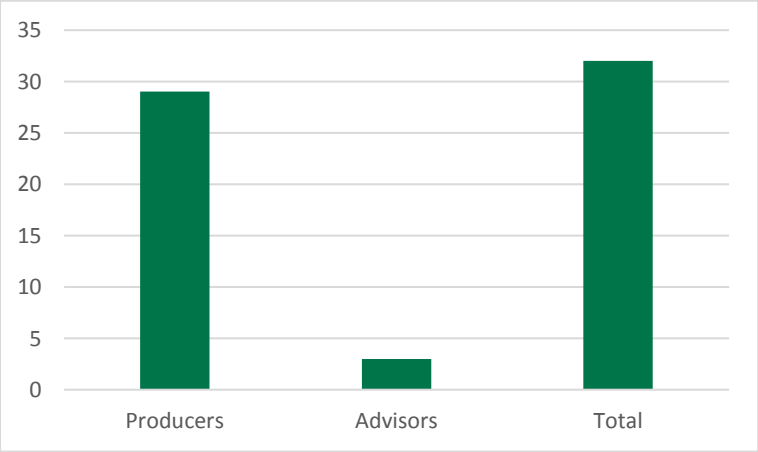


Fig. 5: SA – medium rainfall engagement numbers

4.2.6 Tasmania (Macquarie Franklin)

- One focus group and two workshops were delivered in this agro-ecological zone
- 7.8 out of 10 - average focus group value
- Workshop
    - 8.3 out of 10 average for value
    - 8.3 out of 10 average for satisfaction.

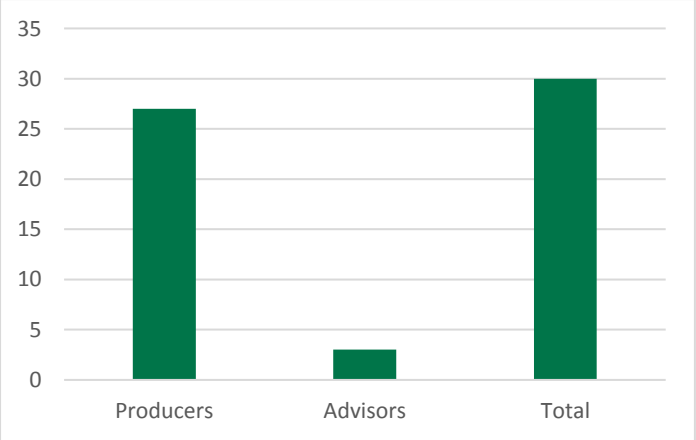


Fig. 6: Tasmanian engagement numbers

4.2.7 Victoria – North (RM Consulting Group Pty Ltd)

- One focus group and three workshops were delivered in this agro-ecological zone
- 8.5 out of 10 - average focus group value
- Workshop
    - 8.7 out of 10 average for value
    - 8.7 out of 10 average for satisfaction.

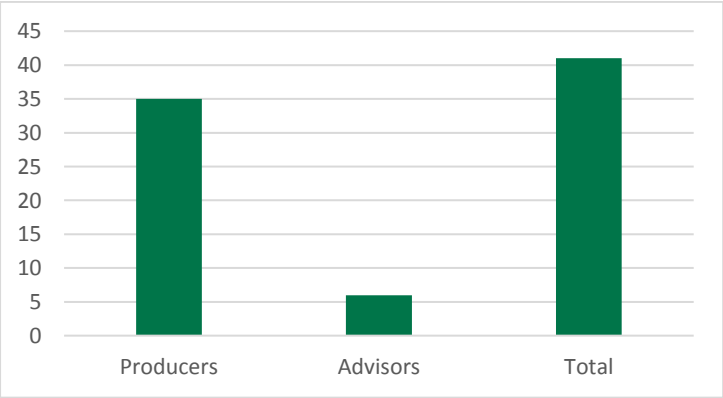


Fig. 7: Victoria – north engagement numbers

4.2.8 Victoria – South (RM Consulting Group Pty Ltd)

- One focus group and two workshops were delivered in this agro-ecological zone
- 8.3 out of 10 - average focus group value
- Workshop
    - 8.9 out of 10 average for value
    - 9.2 out of 10 average for satisfaction.

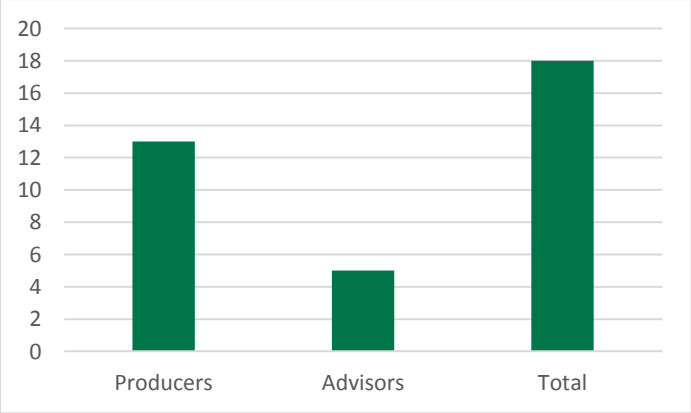


Fig. 8: Victoria – south engagement numbers

4.2.9 Western Australia – Low rainfall (Farmanco Management Consultants)

- Three workshops were delivered in this agro-ecological zone
- Workshop
    - 7.9 out of 10 average for value
    - 8.2 out of 10 average for satisfaction.

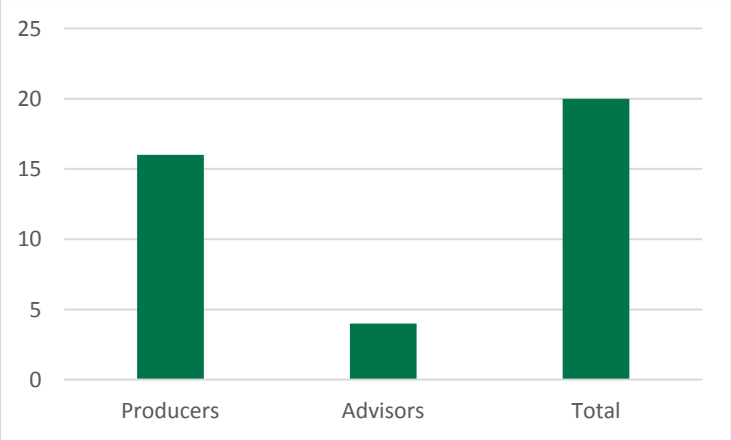


Fig. 9: Western Australia – low rainfall engagement numbers

4.2.10 Western Australia – Medium rainfall (Farmanco Management Consultants)

- One focus group and two workshops were delivered in this agro-ecological zone
- 8.5 out of 10 - average focus group value
- Workshop
    - 7.9 out of 10 average for value
    - 8.4 out of 10 average for satisfaction

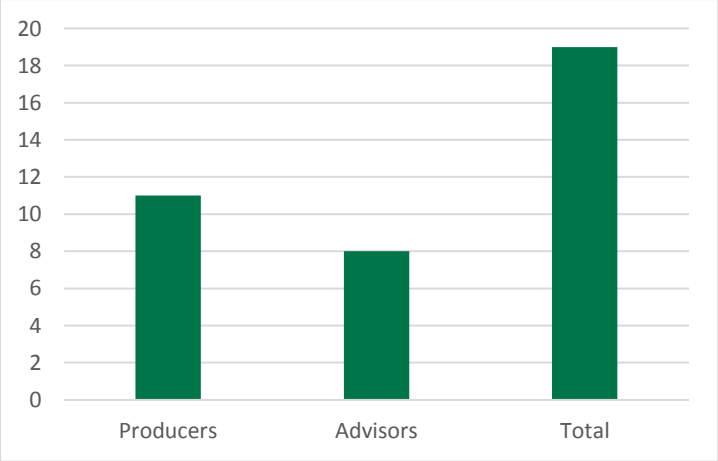


Fig. 10: Western Australia – medium rainfall engagement numbers

5 Discussion

A key benefit of this national project was that it was driven from the agro-ecological zone level, where each of the project partners were able to draw out local insights and perspectives. The project methodology allowed exploration of a range of environmental and enterprise characteristics that were unique to each agro-ecological zone. This resulted in high-value management guidelines tailored at a local level.

A consistent message from the project was that there is a large gap, in whole of business financial performance, between the top 20% producers and the remaining 80% of producers in each agro-ecological zone. This was despite the resource base, between the remaining 80% of producers and the top 20%, being similar in regard to scale, soil type and rainfall. This identifies that there is abundant opportunity for many producers to increase profit from the resources they currently have available to them. This is referred to as internal capacity.

There are two different types of results discussed below. The first is the findings of the data analysis and the second is the overall project against the objectives and outputs. Section 5.1 and 5.2 discuss the results of the benchmarking analysis. Section 5.3, 5.4 and 5.5 discuss the results from the focus groups, workshops and achievement of the overall project objectives. Section 5.6 discusses possible improvements.

5.1 Successful integration

The successful application and implementation of all four primary profit drivers, in both the cropping and livestock enterprises, resulted in well integrated and profitable mixed farming businesses. This results in win-win outcomes for both enterprises, as was demonstrated by the top 20% producers within the data set. Win-win outcomes are defined by scenarios where an uplift in performance in both the cropping and the livestock enterprise are achieved as a result of successful integration. Optimising the win-win opportunities are important to achieving robust levels of whole of business performance in mixed enterprise businesses.

Fig. 11 is an illustration of the four primary profit drivers being applied to achieve profitable integration. This diagram is a core feature of each management guideline and visually represents implementation of the profit driver framework to result in profitable integration.

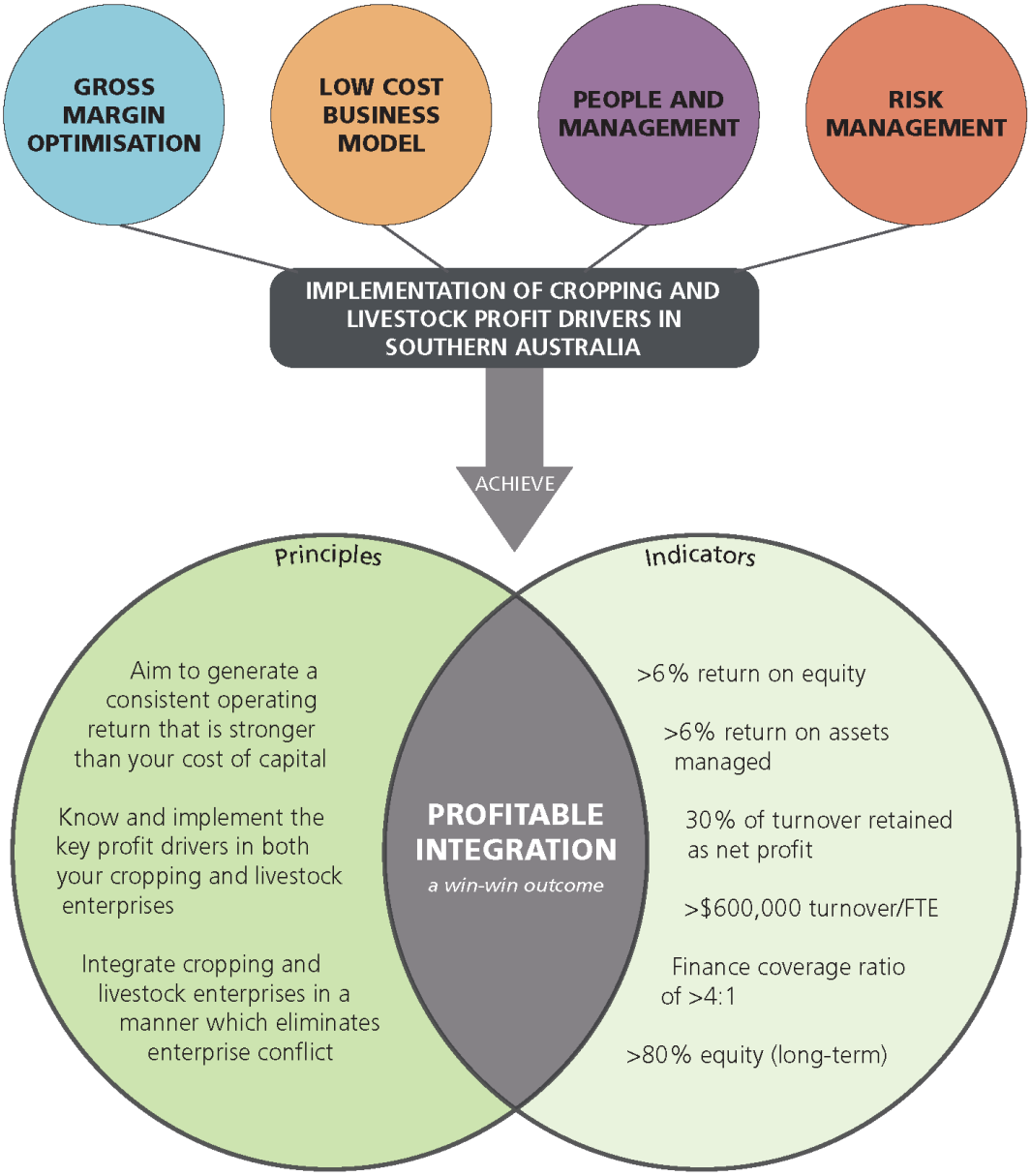


Fig. 11: The profit driver framework for the successful integration of cropping and livestock in southern Australia. As presented in the management guidelines, excluding Tasmania (Appendix 8.8).

Given the diversity of mixed enterprises in Tasmania, some principles varied slightly in their diagram but still achieved profitable integration. The principles of successful integration, excluding Tasmania, were identified as:

- Aim to generate a consistent operating return that is stronger than your cost of capital
- Know and implement the key profit drivers in both your cropping and livestock enterprises

- Integrate cropping and livestock enterprises in a manner which eliminates enterprise conflict.

In Tasmania the principles of successful integration were identified as:

- Generate a consistent operating profit (ROAM) that is higher than the cost of capital
- Know the key profit drivers within all enterprises and manage to optimise business performance
- Integrating cropping and livestock enterprises strategically to minimise conflict for resources (using marginal cost revenue to profitably integrate).

The project identified that all primary profit drivers were within the control of management. The top 20% producers focused on what would provide the best return for their energy invested. Focusing on what they could influence and factors that were within their control.

The top 20% producers integrated the four primary profit drivers successfully in a synergistic manner to drive profitability and eliminate enterprise conflict, as shown in Fig. 12. Despite the risk of tension between their cropping and livestock enterprises, the top 20% producers were able to optimise the win-win outcomes. A win-win outcome results in benefit for both enterprises, ensuring that the highest profit margin for the business was achieved. The top 20% producers achieved 27% net profit as a percentage of income, compared to 10% for the remaining 80%.

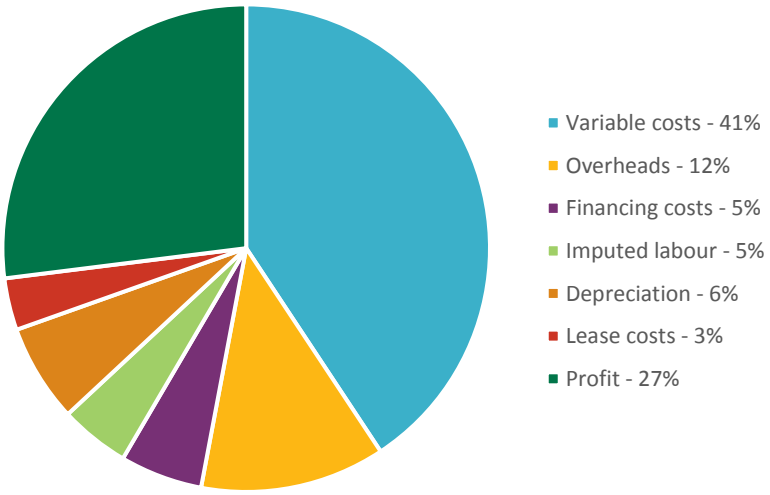


Fig. 12: National top 20% by ROE as a proportion of income

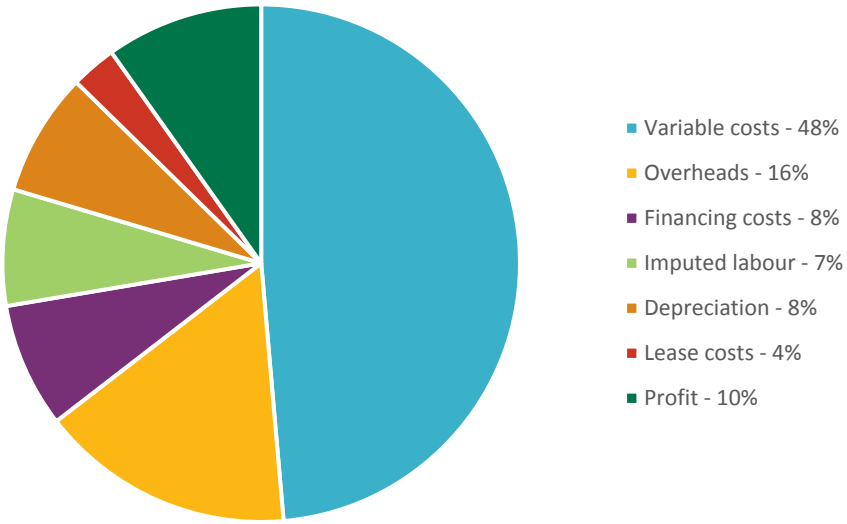


Fig. 13: National remaining 80% by ROE as a proportion of income

Fig. 13 illustrates that net profit as a percentage of income has been reduced to 10%, potentially due to enterprise conflict and increased variable and overhead costs. This not only reduces the businesses ability to provision for other costs such as capital improvement and succession but also reduces the resilience of the whole businesses. A production shock that reduced the income of a remaining 80% producers income by 20%, would result in a 10% operating loss. However, top 20% producers experiencing the same production shock, would break even.

The indicators of successful integration are listed in key messages 7.1

5.2 The primary profit drivers

Four primary profit drivers were identified through the Grains Research and Development Corporation (GRDC), 'The integration of technical data and profit drivers for more informed decisions', project. 'The profitable integration of cropping and livestock in southern Australia' project was a progression of the GRDC project with a specific focus on mixed enterprise businesses. It identified that the same four primary profit drivers were underpinning the superior financial performance of top 20% mixed enterprise businesses. This project took the established profit driver framework and was able to contextualise and validate that it applied to mixed farming businesses. Just as the GRDC project found, this project reinforced that all profit drivers must be implemented to maximise profitability. If one or more is neglected, then whole of business profit will suffer.

There were a range of secondary and tertiary profit drivers identified that influenced and assisted in driving whole of farm business performance. These secondary and tertiary profit drivers support the primary profit drivers. However, the four primary profit drivers that impacted long-term financial performance are:

1. Gross margin optimisation
2. Low cost business model
3. People and management

4. Risk management.

5.2.1 Gross margin optimisation

Gross margin optimisation is a measure of operational efficiency. Gross margin is income less variable costs. In a mixed enterprise setting, gross margin optimisation is influenced by a number of secondary and tertiary drivers including:

- total farm income
- crop agronomy
- timeliness of operations
- turn-off weight of young stock
- reproduction rate
- adult fleece value in wool enterprises
- grazing management
- disciplined approach to variable cost inputs.

Just as Tasmania reported a slight difference in the principles of successful integration, some of the states had slight differences in local agro-ecological zone principles of gross margin optimisation. The principles of gross margin optimisation were identified as:

- Aim to optimise crop yield in a cost-effective manner
- Aim to optimise livestock income in a cost-effective manner
- Target superior gross margin performance in both the cropping and livestock enterprises (excluding Victoria – north)
- Target superior gross margin performance in both the cropping and livestock enterprises with an acceptable risk profile (Victoria – north and south only)
- Disciplined and balance approach to variable cost inputs (Victoria – North and South only)
- Optimise gross margin performance (Tasmania only)
- Optimise crop and livestock yields while minimising variable costs per unit of saleable product (Tasmania only).

The indicators of successful gross margin optimisation are listed in key messages 7.2.

Across the agro-ecological zones, the top 20% producers were consistently generating higher income per hectare in both their cropping and livestock enterprises, whilst having lower variable costs as a percentage of income. This demonstrated that the top 20% were able to optimise gross margin with a sustainable and disciplined investment in variable input costs.

The top 20% producers were typically leveraging more revenue through:

- Superior timeliness of key operations – achieved through knowing the target and being able to consistently implement against the target under variable conditions, through simple and scalable systems thinking and developing systemised patterns of work
- Excellence in agronomy – superior crop monitoring skills and timely implementation against the fundamentals of rotation, nutrition, weed and pest control

- High margin crop types – selection of crops that suit available land classes and environment as well as having access to markets
- Heavier turn-off weights from a pasture-based system – through utilising a higher proportion of their pasture for production, rather than maintenance. This is achieved through effective grazing management
- Higher adult fleece values in Merino enterprises – driven by fleece weight and micron
- Efficient grazing management – setting sustainable stocking rates and leveraging revenue from individual animal performance.

It should be noted that price received was not a significant driving force of the differences in financial performance. Long-term data for all agro-ecological zones showed that there was no significant difference in prices received between the top 20% producers and the remaining 80% of producers.

5.2.2 Low cost business model

The low cost business model profit driver is influenced by a farm's structural efficiency and reflects the overhead cost structure of the business.

The principles of developing a low cost business model were consistent across the reported zones:

- Achieve high machinery and labour utilisation
- Avoid unnecessary enterprise complexity
- Strive to develop scalable farming systems
- Maximise profitability by using simple repeatable systems of management (Tasmania only)
- Minimise the number of enterprises through profit and risk trade-offs (Tasmania only)
- A profitable business is in a strong position to grow (Tasmania only).

The indicators of a successful low cost business model development are listed in key messages 7.3.

The two largest overhead costs in a mixed farming business are the costs of owning machinery (depreciation and interest) and employing labour (whether family or non-family). How these overheads are utilised has a big influence on profitability. Leveraging more from these large ongoing investments is a key differentiation of the top 20% producers.

The top 20% producers were able to maximise utilisation of machinery and leverage more revenue per unit investment into machinery. They implemented simple, scalable faming systems and systemised patterns of work to ease logistical bottlenecks. They also generated higher turnover per full time equivalent (FTE). They have logical and systematic thinking and simplified systems of work. Simplicity provides focus as well as task clarity. This is one of the key drivers of achieving higher levels of machinery and labour utilisation.

In their livestock enterprise, the top 20% producers also understood the importance of and achieved high earnings before interest and tax (EBIT), per DSE, driven from stronger revenue per DSE and high turnover per FTE.

5.2.3 People and management

Successful management of a mixed enterprise business is driven by the effective management of people. This has a significant influence on the profit outcome of the business. Successful management is required to get the most out of a team and simultaneously optimise gross margins and develop a low cost business model.

To understand the potential differences in management approach, a qualitative survey was conducted over cross section of producers from each agro-ecological zone. The survey explored the 'non-benchmarking drivers' in the businesses, identified decision making processes, explored what managers considered to be important drivers of profit and delved into their capacity to implement their knowledge. The results from the qualitative surveys were very insightful, particularly around how producers ensured that they make good decisions when under pressure. One producer's response to this question was:

> *"In these situations, the key is to be focused on making good decisions, rather than unnecessarily pressuring yourself to make right decisions, that may only be known with the benefit of hindsight".*

Through the data analysis and qualitative survey process the people and management principles were identified as:

- Adaptable, well thought out operational plans
- Maximise team performance
- Continual improvement in implementation
- Continual improvement in implementation of the business plan (Tasmania only)
- Strive for continual improvement in implementation (Victoria North and South only).

The indicators of successful people and management are listed in key messages 7.4.

There were six management characteristics or traits that were commonly observed in the top 20% producers in the GRDC project. These six management traits were also reflected in the top 20% producers within this mixed enterprise project. These were:

1. Having a systems focus
2. Taking a 'helicopter' view under pressure
3. Internalising and taking responsibility for key business decisions
4. Focusing energy on the things within their control
5. Superior implementation ability
6. Strong observational skills.

It was identified that is it an implementation gap, rather than a knowledge gap, that is driving the substantial differences between the top 20% producers and the remaining 80%. For example, when asked how often they would complete seeding before their 'ideal' completion date, top 20% producers answered at least four years in every five. The remaining 80% producers, however, were rarely finished by their 'ideal' completion date. There was consistency in the definition of the 'ideal' completion date, but a very different level of implementation against this defined target.

5.2.4 Risk management

A resilient business is one which can incur a production or business shock and maintain suitable levels of financial performance. They demonstrate that low risk, high margin agriculture is possible. Business resilience is improved through proactively managing risk.

The principles of risk management were identified as:

- Recognise and believe that low risk, high margin agriculture is possible
- Develop a resilient business model
- Identify and mitigate key production and business risks
- Seek to add profit margin where possible. Adding profit margin to a commodity based business reduces the overall risk profile of the underlying business. Adding profit margin is essentially about having a low cost of production for all commodities produced.
- Aim to develop a resilient business model that can withstand production and business shocks (Victoria north and south only).
- Develop a business model that can withstand volatility of markets and other external influences (Tasmania only).

The indicators of successful risk management are listed in key messages 7.5.

Businesses which have effectively identified and mitigated key production and business risks will generally have less income variation from year to year and lower long-term cost of production. They lower the overall risk profile by optimising their profit margin. Through gross margin optimisation and developing a low cost business model, mixed system farming businesses are able to add profit margin to their business.

The @Risk analysis modelled the risk profile of the top 20% businesses compared to the remaining 80% businesses. It considered different seasonal and commodity price conditions. The @Risk analysis included a catastrophic event that reduced income by 50% once in every 10 years.

Fig. 14 illustrates the lower risk profile of the top 20% producers in WA's medium rainfall agro-ecological zone, compared to the remaining 80% of producers, which was typical of all agro-ecological zones in the project. They incur operational losses 2 in every 10 years, rather than 4 in every 10.

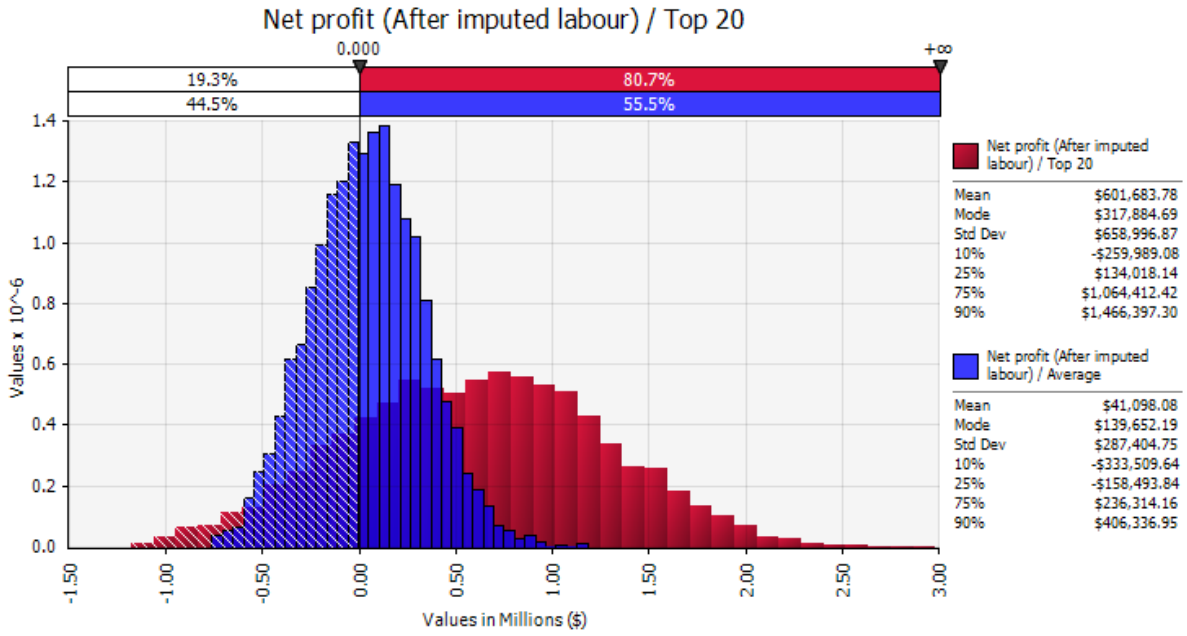


Fig. 14: @Risk representation of net profit (after imputed labour) between top 20% producers and remaining 80% producers in WA medium rainfall agro-ecological zone.

5.3 Focus groups

Focus groups were designed to validate the initial project findings and 'test' the workshop model and content. Attendees were mostly data contributors. The session was designed to add value to attendees, by improving their knowledge, and also gain valuable feedback on the workshop session plan.

Of all focus group attendees, 98.2% reported they learnt something at the session. They provided the following detail around what they learnt:

"Integration is possible and profitable".

"Effective management of a mixed enterprise increases profitability, helps the mix complement each other. Using management as a primary tool".

"Which areas of our business were most important in making our business profitable compared to others similar to our business".

"Benchmarking would be key in moving forward".

"(I) learnt that comparative analysis is not enough to improve our business".

"That we need to look at our business ourselves in detail to determine the areas we need improvement and additional skills".

"Opportunity to simplify the business - key profit drivers".

"The value of being able to put figures to everything that is done to ensure that the business is profitable and comparing to others so we are heading in the right direction".

Valuable insights were gained relating to format of the final management guideline and planned workshops. This included:

"A half day session works well".

"Group discussions would be beneficial or hearing from more individuals".

"Lead with outcomes, then explain reasons".

"Give relevant useful info that people can use. Identify areas that can be changed/improved in our business".

"*A practical aspect such as the farm comparison worksheet is invaluable".*

The focus groups provided valuable feedback for the project partners on their final workshop structure and content. The sessions added value to attendees with a national average satisfaction score of 8.5 out of 10.

5.4 Workshops

Nationally the workshops were well supported and received positive feedback from attendees. A total of 275 mixed enterprise producers and 123 advisors were engaged during the extension phase of the project.

Of all workshop attendees, 99% agreed that the workshop met the objectives, commenting that the workshop:

"Was even more comprehensive and thorough than I realised." - Canowindra Workshop attendee

"Exceeded my expectations." - Loxton Workshop attendee

"Messages were clear and simple." - Young Workshop attendee

"Opened your mind up to different way to farm land and manage operation." - Campbell Town Workshop attendee

"As a university graduate it has opened my eyes up to looking at situations and farms in a different light." - Derrinallum Workshop Attendee

All workshop attendees gained knowledge in all sessions presented, with the largest knowledge gain from the gross margin optimisation section, 6.8/10. The low cost business model session recorded a 6.7/10, followed by whole of business 6.5, risk management 6.1 and, finally, people and management 6.0. Given the workshops were only presented over half a day, there is scope to increase knowledge transfer via a multi-session or 'masterclass' delivery method, as indicated by the below comment.

"Found it very useful, would be better as a whole day workshop to have more time to digest but, great!" – Bordertown workshop attendee

Attendees reported gaining a large amount of value, average 8.4 out of 10 nationally from the workshops. When asked what aspects of the workshop they valued, it was reported that value came from a variety of workshop aspects, such as:

- Workshop messages

  "Low risk/high return, simplifying farming, the big rock areas/focus." - Clare workshop attendee

  "Simplification and timeliness and how complicated business systems interrupt profitability." - Canowindra workshop attendee

  "Company aspects of how top managers manage, their characteristics and attributes compared to the average 80%." - Canowindra workshop attendee

  "Key secondary and tertiary profit drivers for the four primary profit drivers (I was surprised by some - expected some of the small 'rocks' to be larger influences)." - Loxton workshop attendee

  "Simplicity pays!" - Bordertown workshop attendee

  "Self-development. It's the jockey, not the horse." - Bordertown workshop attendee

- Benchmarking and indicator data

  "Benchmarking information for mixed enterprises, rather than single enterprise analysis." - Clare workshop attendee

  "Performance indicators, and how to calculate them." - Jerilderie workshop attendee

  "Really good to see some KPIs that are relevant to the Mallee." - Loxton workshop attendee

  "'Win-win integration' – benchmarking. A useful tool to improve one's business and to see one's strengths and weaknesses." - Moora workshop attendee

- Resources

  "Good presenter, management guideline – good insights for later reference highlighting the different profit drivers." - Clare workshop attendee

  "Takeaway notes allowed me to concentrate on the presentation." - Derinallum workshop attendee

- Workshop activity

"Comparative exercise with the 5 businesses was valuable." - Clare workshop attendee

- Workshop environment

"Time away from paddock to think, reflect and learn." - Moora workshop attendee

"Networking with people in similar circumstances." - Canowindra workshop attendee

"The actual concept of looking at what successful businesses are doing well and what is driving their success." - Canowindra workshop attendee

"Lots of valuable info, loved benchmarking figures, worksheet handout of slides, management guide (diagnostic tools, glossary, acronym - summary)." - Young workshop attendee

"That the conservative, low-risk business model rings true - don't need to go into debt to be profitable. Big picture perspective for small decisions." - Loxton workshop attendee

"Loved the info at the beginning and found the exercise and benchmarking figures pivotal to cementing the ideas and concepts." - Loxton workshop attendee

From the workshops 97% of attendees reported that they felt confident applying the on farm actions that were presented during the workshops to their own businesses. Common responses to what actions do you plan on implementing were:

- *Better time management and organisation*
- *Better timeliness around seeding and key livestock operations*
- *Simplifying production systems and enterprise mix*
- *Reviewing business and enterprise operations*
- *Improved nutrition to drive reproduction rate and turn-off weight*
- *Early succession planning*
- *Calculation of TPML*
- *Plan more time off farm for recharge*
- *Identify business strengths and weaknesses*
- *Improve infrastructure to improve labour efficiency*
- *Become a top 20% producer.*

It was also reported that the provision and facilitation of the management guideline during the workshops was highly valued. When the follow-up survey was undertaken, approximately 6 weeks after the workshops, 67% of respondents indicated that they had referred to the management guideline since the workshop, further highlighting its value.

5.5 Project objectives

1. *By April 2017, 100 datasets involving a minimum of 3 years of consecutive data per dataset have been collected and analysed. Skills audits will be undertaken during the data collection process. In addition, 25 qualitative surveys completed across a range of producers. Data analysis complimented with the application of a risk assessment tool and profit drivers identified.*

   This objective was achieved via data collection, from the nine agro-ecological zones, involving a minimum of three years of consecutive financial and production data. This data was analysed to identify the top 20% by return on equity (ROE) and/or return on assets managed (ROAM).

   The skills audits were designed to understand producers' technical knowledge of their cropping and livestock enterprises. Skills audits were completed by the producers at the beginning of their data collection journey. These audits allowed for the analysis of producer technical knowledge to establish if there was a link between higher knowledge and higher performance by the top 20% producers.

   The qualitative survey complemented the skills audits by providing insight into the management and decision-making approach of top producers. It was identified that it is primarily an implementation gap, rather than a knowledge gap, that is driving the substantial differences in financial performance between the top 20% producers and the remaining 80% of producers. The skills audits indicated that a lack of knowledge is not what was holding the remaining 80% of producers back, but rather consistent implementation of this knowledge was driving the top 20% achievement of greater profitability.

   While this project objective was successfully achieved, there were some associated challenges. Recruiting the majority of participants for the project required minimal promotion and invitation, however recruiting the final 25% of producers was a lengthier process and required significant effort. This is a common challenge in projects requiring producer participation.

   The quantity of data required proved challenging, as the level of record keeping among the participants varied widely. Some producers readily located the data, while others required time to dig it out. On farm data collection was the best way to support this process but it was time consuming from a delivery perspective. Some producers were put off by the deadlines that were placed on the project team and then relayed to them in order to finalise data. There were times where the data collection pressure, including the timeline and the quantity of data required, hindered participation. This is also a common challenge in projects of this type.

2. *By 31 October 2017, outputs to be tested with focus groups in each area prior to workshop roll out. The purpose of the focus groups will be to test and refine the project outputs.*

This objective was achieved. A total of eight focus groups were held to guide the finalisation of the management guidelines (Appendix 8.3) and workshop content/session plans. Producers that were involved in the data collection stage of the project were invited to participate in the focus groups and provide feedback. All of the participants that attended the focus groups learnt something from the session and found it valuable.

"This session has been invaluable in helping understand the data, and the feedback we have received to help keep us motivated to implement change." - Focus group attendee/data contributor

A challenge that was faced by the project team in relation to the focus groups was timing. Unfortunately, due to the delays in data collection phase of the project, harvest had begun before some focus groups were underway. In the earlier agro-ecological zones this had an effect on focus group attendance. It was negotiated for those agro-ecological zones that a focus group wasn't delivered; a half day workshop would be delivered after harvest.

3. *By 31 October 2017, a management guideline has been developed which identifies how producers can incorporate the project findings into their own businesses in a strategic manner.*

   This objective was achieved. A management guideline (Appendix 8.3) was produced for each of the nine agro-ecological zones. Each management guideline was centred around the four primary profit drivers, what results were being achieved by the top 20% producers for that agro-ecological zone, and how they were achieving it. An individual case study was included to provide a practical example of the primary profit drivers implemented by high performing producers in the local area.

   The development of the management guideline, the main output of the project, was a success. The management guidelines provided extensive detail on the four primary profit drivers and successful integration, making it a valuable reference to refer to well after the workshops. This was supported by 67% of the post-workshop survey respondents having referred to the management guideline since attending the workshop.

   The process of writing the management guideline was a lengthier process than anticipated. The learnings from this highlight the importance of communication within the project team to ensure clarity in expectations. There is great benefit in the entire project team understanding MLA's requirements for the outputs, including MLA communications.

4. *By 1 April 2018, 2 x half day workshops per ago-ecological region to be delivered. There will be 18 workshops in total to extend the key project messages.*

   This objective was achieved. A total of 22 workshops were delivered in relevant agro-ecological zone. Each workshop engaged mixed farming system producers and advisors who were taken through a case study exercise reinforcing key messages, benchmarking results and the relevant management guideline.

   The workshops presented each of the four primary profit drivers, supporting principles and indicators and how these were being achieved by top 20% producers. They also incorporated suggested on farm actions to be implemented to improve profitability.

   The success of the workshops was demonstrated by the number of producers and advisors that attended. The initial engagement target of 100 producers and 10 advisors was significantly exceeded. Overall 275 producers and 123 advisors were engaged. The high demand for the workshops lead to Rural Directions Pty Ltd presenting three extra workshops in SA.

   The demand for the workshops has continued since the completion of the extension phase of the project, another measure of its success. Over the coming months, the project findings are being presented at a variety of different industry events. These include the Mackillop Farm Management Group's autumn update, Tasmania's red meat updates, NSW's 'It's ewe time' forums.

   In some agro-ecological zones the workshop engagement wasn't as high as others. This was potentially due to workshop timing conflicting with seeding preparation and the 'golden' window of late April, when canola and other break crops should be sown. As presented in the management guidelines, preparation for seeding and the 'golden' window are an integral part of timeliness and optimising the win-win outcomes.

   As most project partners quickly filled their workshops, the project team is confident there would be demand if future workshops were held. This was supported in workshops evaluation with comments such as:

"It made me aware that there is more information available on the subject than can be covered in one workshop, very good overview." - Loxton Workshop Attendee

5.6 Improvements

5.6.1 Benchmarking analysis

SnapShot™ enabled consistency in the collection and analysis of financial and production data of both cropping and livestock enterprises nationally. SnapShot™ is named to reflect a 'snapshot review' that captures the core financial and production data in a practical manner, just like a photograph is a snapshot in time. SnapShot™ considers the relationship between crop and livestock enterprises and makes allocations for important items such as internal grain transfers and grazing livestock on stubbles.

It was great to be able to use a consistent benchmarking system for the project nationally across southern Australia. There is however diversity and complexity within mixed production systems nationally. As a result there were some minor challenges with the use of SnapShot™, particularly in regard to managing the additional enterprise complexity that is common in Tasmania. These may be a consideration for future projects.

Full time equivalents (FTE) were allocated to enterprises, based on the income generation of each enterprise. This resulted in some enterprises receiving an over-allocation of labour (FTE) due to their financial performance. This may have slightly misrepresented the labour required by the enterprise in some situations, however it provided the best option for this analysis at the time. Due to this approach, the delivery team ensured this was explained clearly to data contributors and workshop attendees. It was successfully used to initiate a conversation about labour utilisation. SnapShot™ is going to be enhanced moving forward to have labour allocated based on estimated hours invested in each enterprise.

As SnapShot™ was initially designed and trialled in the mid north of South Australia, it was suited to broad acre cropping and livestock mixed enterprise businesses. This was a good fit for eight of the nine agro-ecological zones in the project. It did present a minor challenge, for Tasmanian data, that included a large variety of horticultural and small seed crops. This was overcome with the use of a 'key' in the cropping section of the reports. If further projects are undertaken, it may be beneficial to have the ability to handle multiple horticultural and small seed varieties and record the use of irrigation.

During the data collection process there was data that was labelled as 'optional', for example weaning and lambing percentage. It was noted that many of the top 20% producers were able to provide this data, but it was not provided by all participants. Reproduction is a secondary profit driver in livestock enterprise gross margin optimisation, so it would be beneficial for this data to have been compulsory to collect. Given the importance of this secondary profit driver, this data would be compulsory for future projects.

5.6.2 Recruitment of producers/data contributors

There was a high level of producer interest in this project. Converting this interest into contributing benchmarking data was a minor challenge.

All of the participants involved in the project were informed of the benefits of the project. Their involvement provided them with the benefit of a 1:1 benchmarking report back, some consulting advice and a detailed report for their business highlighting any trends over a three year period.

A few project partners recruited via members of their existing benchmarking groups. There were also participants new to benchmarking that were keen to be involved. This was a positive mix as it created a robust data set.

As with any project, getting the final participants committed is always a challenge. The final stage of recruitment required a lot of 'leg work' and investment of time, by the project partners, to get producers involved.

For future projects, it would be worth considering allocating funds to the time required to recruit data contributors.

Allocating some funds for data contributors, to reimburse them for their time, is also a consideration for the future. This would demonstrate to the producer that their data is valued along with the time it takes them to prepare the data required.

5.6.3 Data collection

This project has compiled a robust data set. Data accuracy and integrity was paramount to the accuracy of the benchmarking reports and the overall success of the project.

Many data contributors have said they would like to continue benchmarking now they have set up their records and understand the data that is required. This reflects that it was a positive and valued experience for the data contributors.

The amount of data collected, and the process involved in checking the integrity of the data, required more time than initially budgeted. As a result, there were many tight deadlines for data contributing producers and project partners. For some this created a pressure point, as the consultant needed the data finalised, but the contributor was not under the same external pressure. Again, this is not unique to a project of this type.

To complete accurate data collection and provide support to data contributors, there was a significant amount of travel required to get on farm. This was not accounted for in the project budget.

As we are now aware of the primary profit drivers in mixed enterprise businesses, the data collection process could potentially be refined slightly to focus on only the data that relates to these drivers and, potentially, streamline the process. This could possibly reduce the amount of time required for the data collection process, however the changes would only be minor given the requirement to capture true whole of business financial performance.

It would also be beneficial for the budget to include more time for data collection and a travel budget for data collection.

5.6.4 Data entry/handling

As stated above, a large and robust data set was compiled during this project. This was essential to the project's success, but it did present some minor challenges as large amounts of data were entered into SnapShot™.

There was an element of double entry during analysis as data was entered into excel and then into the SnapShot™ database system.

For future projects, the data collection process could be streamlined further. This could be via direct data entry. This has the potential to reduce double entry data and increase integrity.

5.6.5 Focus groups

The focus groups provided a forum for discussion around the data collection process and benchmarking reports, along with road testing the workshop and management guideline format. However, due to the extra time that was required during the data collection and analysis process, the development of the management guidelines was pushed back and squeezed. This meant that most focus groups weren't presented with the finalised management guideline to review. Despite this, the focus group participants still provided valuable insight into the management guideline and workshop model. This included workshop timing and length. The finalised management guideline was provided to most focus group participants once finalised.

The data contributing producers that attended the focus groups became advocates for the recruitment of other producers for the workshops.

5.6.6 Management guidelines

As mentioned previously, the length of the data collection and analysis process, pushed out time available for the development of the management guidelines. While this did not disadvantage the final project output, it did place increased pressure on those involved in the writing and editing process.

5.6.7 Workshops

The workshops were a very successful output of the project. There were a few timing challenges due to the extended data collection phase and finalisation of the management guidelines. However high engagement numbers were recorded overall. Demand in some agro-ecological zones was large enough to warrant the delivery of further workshops.

In some zones, engagement may have been increased by delaying delivery of the workshops until after seeding. For the current project, this would have meant delivering outside of the contract period, so it wasn't possible. Setting delivery periods outside of key production periods would be essential for successful future extension. The majority of participants were engaged in the planned February and March period.

The level of engagement and positive feedback highlights the opportunity for the project outputs and workshop to be further developed into either:

- Another round of workshop extension
- A supported learning project as a part of MLA's Profitable Grazing Systems (PGS) program.

6 Conclusions/recommendations

6.1 Conclusion

The project achieved its aim of defining the primary profit drivers in mixed farming systems that optimise the available synergies between cropping and livestock enterprises.

The project highlighted that the majority of producers are limiting their profit and production success through a lack of implementation, rather than a lack of knowledge. There is significant internal capacity for growth in profitability within these businesses, rather than looking outside of the business for growth opportunities.

This project has delivered a series of high value focus groups and workshops. These were supported by practical management guidelines and fact sheets. Excellent levels of producer and advisor engagement in the workshops demonstrated that the project outputs were topical and highly valued.

6.2 Recommendations

6.2.1 Future extension

The demand from producers and advisors for workshops during the extension phase of the project illustrated the importance of the findings of the project and the demand for research-based and localised information around mixed enterprise. The demand for the workshops suggests that there is scope for further extension of the project outcomes.

Feedback from focus groups and workshops, suggests that further workshops or a Supported Learning Project (SLP) under MLA's Profitable Grazing Systems (PGS) program would be worthwhile next steps for future extension. A SLP would continue to transfer the learnings of the project and enable producers to learn and build the skills required to take them towards being a top 20% producer.

The management guidelines were designed to be presented via facilitated workshops. As the management guidelines contain key information regarding the successful integration of mixed enterprises, there is a potential gap in not having them available as a standalone document for other producers and advisors to access. Moving forward, editing the management guidelines to remove or reconsider the requirement for facilitation, may improve the extension reach of the project outputs and complement the nine agro-ecological project factsheets. This would be at MLA's discretion. Understanding the seasonal influence behind the data and appropriate context of the key principles

is the primary reason behind why the management guidelines are best provided as a supporting resource to the half day workshops.

Rural Directions Pty Ltd would welcome discussion with MLA on extension options for these project outputs.

6.2.2 Future R&D

There is the opportunity to continue to engage with those producers who were involved the project to build a long-term data set for mixed enterprise businesses in southern Australia. This could go a long way to increasing industry understanding of mixed enterprise business performance on a longitudinal basis and provide further evidence that the principles outlined in this project are robust through time.

7 Key messages

A consistent message from the project is that there is a large gap in financial performance between top 20% businesses and the remaining 80% businesses in each agro-ecological zone. There is abundant opportunity for many mixed enterprise producers to increase profit from the resource base that they currently have available to them.

The project identified supporting principles and indicators for each of the four primary profit drivers. The principles were discussed in Section 5. Below is a summary of the indicators.

Each indicator is a benchmark for producers to aim for, to move toward being a top 20% producer. Achievement of all of the indicators is representative of successful integration of both the cropping and livestock enterprises. The opportunities and potential pathways to enhance profitability will be somewhat unique to each farm business.

Similarly, to the primary profit driver principles, the indicators differed slightly over each of the agro-ecological zones. To reflect this, all the indicators have been listed.

7.1 Profitable integration indicators

- 30% turnover retained as net profit
- >6% return on assets managed (ROAM)
- Finance coverage ratio of >4:1
- >6% return on equity
- >$600,000 turnover/FTE
- >80% equity (long-term)
- >150,000 net profit (EBT)/FTE (Tasmania only)

7.2 Gross margin optimisation indicators

- Optimise crop yield in a cost effective manner
- Match the variable cost structure for the current season to the potential income (price x yield) for the current season
- Keep enterprise variable costs to less than 40% of enterprise income – whole of business
- Keep enterprise variable costs to less than 40% of enterprise income for cropping and 35% for livestock
- Strive to invest $30 or less/tonne of cereal yield into nitrogen and phosphorus based fertiliser and $25 or less/tonne of cereal yield on chemicals
- Target between 0.5 and 1.0 breeding ewes/ha/100mm of annual rainfall (depending on land class)
- Seek to optimise heavy turn-off weight in lambs from a grass based diet (i.e. >52kg live weight)
- Seek to optimise adult fleece value (>$50 per adult fleece long-term)
- Seek to optimise heavy turn-off weight – lambs (52kg) and cattle (450kg) (Victoria north and south only)
- Utilise 1t of dry matter/100mm rainfall (or 1ML irrigation)/ha in livestock enterprises (Tasmania only).

7.3 Low cost business model indicators

- >$20 EBIT per DSE long term ($40 EBIT per DSE is possible under current market conditions)
- Total Plant Machinery and Labour (TPML) costs less than 25% of income
- 0.8:1 machinery investment to income ratio or better
- 8,000 DSE (sheep) or 16,000 DSE (cattle)/ FTE
- Cost of production stretch target per kilogram of CWT of less than $3.00 – lamb
- Overhead expenses per DSE of less than $15
- >$600,000 income per FTE (Victoria north and south only)
- >$150,000 net profit (EBT)/FTE (Tasmania only)
- >80% equity (long-term) (Victoria north and south only)
- Debt to income ratio <1:1 (Victoria north and south only)
- Finance and leasing costs as % of income <15% (Victoria north and south only)
- >$100 EBIT/ha per 100mm rainfall (Tasmania only)
- >6% ROAM (Tasmania only).

7.4 People and management indicators

- Profit per full time equivalent of >$150,000
- Target seeding completion date achieved in at least 9 out of 10 years
- Minimum of 4 weeks of annual leave off farm each year and at least 5 days training
- Documented roles and responsibilities for each person working in the business (Victoria north and south only).

7.5 Risk Management indicators

- Total production costs ≤ decile 2 prices for all commodities
- Business losses in less than 1 in 10 years (or 1 in 5 in lower rainfall areas)
- Low volatility in net profit from year to year
- >$150,000 net profit (EBT)/FTE (Tasmania only)
- Low volatility in variable costs to income ratio from year to year, with target less than 40% for cropping and less than 35% for livestock (Tasmania only).

8 Appendix

8.1 Glossary of common acronyms

DSE	Dry sheep equivalents
EBIT	Earnings before interest and tax
FTE	Full time equivalent
GRDC	Grains Research and Development Corporation
ROAM	Return on assets managed
ROE	Return on equity
TPML	Total plant machinery and labour

8.2 Outputs from project tender and research agreement

8.2.1 Output 1 – data analysis and profit driver identification

- Collection of a minimum 100 datasets with at least 3 years of data, across the five agro-ecological zones identified for South Australia, Victoria, Western Australia, New South Wales and Tasmania
    - 20 datasets in South Australia – collected by Rural Directions Pty Ltd
    - 20 datasets in New South Wales – collected by Rural Directions Pty Ltd
    - 20 datasets in Victoria – collected by RMCG
    - 20 datasets in Tasmania – collected by Macquarie Franklin
    - 20 datasets in Western Australia – collected by Farmanco.
- Data collection and analysis utilising the use of SnapShot Premium™, one of the most advanced benchmarking systems in the industry regarding its capability to generate high impact cropping and livestock production benchmarks as well as key whole of business indicators. SnapShot Premium™ has been developed by Rural Directions Pty Ltd. A strength of SnapShot Premium™ is its unique capacity to correctly account for the internal enterprise transactions between cropping and livestock enterprises.
- Develop skills audit questions for each state that are consistent in principle, but also suitably tailored for each agro-ecological zone.
- Conduct a skills audit with every dataset collected to determine the links between skills and profitability and how these skills integrate with driving strong levels of performance in mixed farming system businesses.

- Each project partner to establish the key management affected profit drivers for each agro-ecological zone from the quantitative data gathered. The identified profit drivers will be those that support the successful integration of cropping and livestock enterprises. The profit drivers established will be based on a combination of the existing knowledge and experience of the local project partners and a researched and informed understanding of 'what good farm managers do' in each region.
- Once profit drivers are established, a qualitative phone survey will be conducted with a cross section of 30 producers. This will involve 10 surveys per state. The selection of growers will be based upon benchmarking results to ensure a good cross section of producers is achieved from the sample.

  The purpose of these qualitative interviews will be to:
  - Test the established profit drivers with producers
  - Understand the 'non-benchmarking' profit drivers
  - Identify the decision making process used in each business
  - Determine how different producers make decisions around key events and circumstances that affect the way cropping and livestock enterprises interact.
- Project partners will then meet face to face to discuss the project findings and outputs for each agro-ecological zone. This aims to establish commonalities between agro-ecological zones and draw out high impact messages that will shape the later outputs. The face to face meeting will be essential to add depth to the project outputs.
- The statistical analysis tool @Risk, will be employed by Rural Directions Pty Ltd to look at the risk profiles of top 20% businesses versus average. The risk profiles of different enterprise mixes will also be considered. This software, combined with a template developed by Rural Directions Pty Ltd, allows for the simulation of farm business performance, across a wide variety of seasonal conditions and challenges, based on a series of researched assumptions. It computes scenarios with the probabilities and risks associated with the farm being considered, providing support for decision making.

8.2.2 Output 2 – outputs tested with focus groups and development of a management guideline

- Each project partner is to deliver one focus group per agro-ecological zone. The purpose of this process is essentially to road test the outputs and findings, amongst producers, and gain feedback on the outputs and key messages. This ensures that, prior to the roll out of workshops, outputs and findings are tested with producers, increasing confidence in the key project messages. The benefit of this process is that messages are adoption ready, as well as providing road tested key messages to producers.
- Each project partner is responsible for their contribution towards the development of a management guideline for each agro-ecological zone. The purpose of this management guideline is to deliver high impact messages for producers that can be employed to assist them to increase overall performance and profitability. The management guideline will focus on the critical success factors to successfully integrate cropping and livestock enterprises.
- To reinforce the high impact messages of the management guideline, producer case studies will be developed. These will demonstrate how producers are successfully integrating cropping and livestock enterprises, to great effect, and consistently achieving high

performance. These are to be delivered for each agro-ecological zone by the responsible project partner.

8.2.3 Output 3 – workshop roll out and delivery

- To achieve the desired outcome of reaching at least 100 mixed farming system producers and 10 advisors, a series of workshops will be developed upon final feedback from the focus group process and the development of previous outputs. There will be two workshops per agro-ecological region providing suitable coverage of the key mixed farming regions across southern Australia. Consistent monitoring and evaluation will be employed in conjunction with Meat and Livestock Australia's Extension and Adoption evaluation standards.
- To ensure an ongoing legacy of resources from the project, a series of published fact sheets will be produced along with the management guideline to assist producers in the evaluation and strategic planning of their own business for better performance. Each project partner is responsible for developing one fact sheet per agro-ecological zone and these will be designed in a consistent manner.

8.3 Management Guidelines

8.3.1 NSW – Central West

Supplied electronically

8.3.2 NSW – South West Slopes

Supplied electronically

8.3.3 SA – high rainfall (SA Mid North Lower Yorke Eyre)

Supplied electronically

8.3.4 SA – medium rainfall (SA Mallee and Upper Eyre Peninsula)

Supplied electronically

8.3.5 Tasmania

Supplied electronically

8.3.6 Victoria – north

Supplied electronically

8.3.7 Victoria – south

Supplied electronically

8.3.8 WA – low rainfall

Supplied electronically

8.3.9 WA – medium rainfall

Supplied electronically

8.4 Factsheets

8.4.1 NSW – Central West

Supplied electronically

8.4.2 NSW – South West Slopes

Supplied electronically

8.4.3 SA – high rainfall (SA Mid North Lower Yorke Eyre)

Supplied electronically

8.4.4 SA – medium rainfall (SA Mallee and Upper Eyre Peninsula)

Supplied electronically

8.4.5 Tasmania

Supplied electronically

8.4.6 Victoria – north

Supplied electronically

8.4.7 Victoria – south

Supplied electronically

8.4.8 WA – low rainfall

Supplied electronically

8.4.9 WA – medium rainfall

Supplied electronically

8.5 Focus group evaluation

Supplied electronically

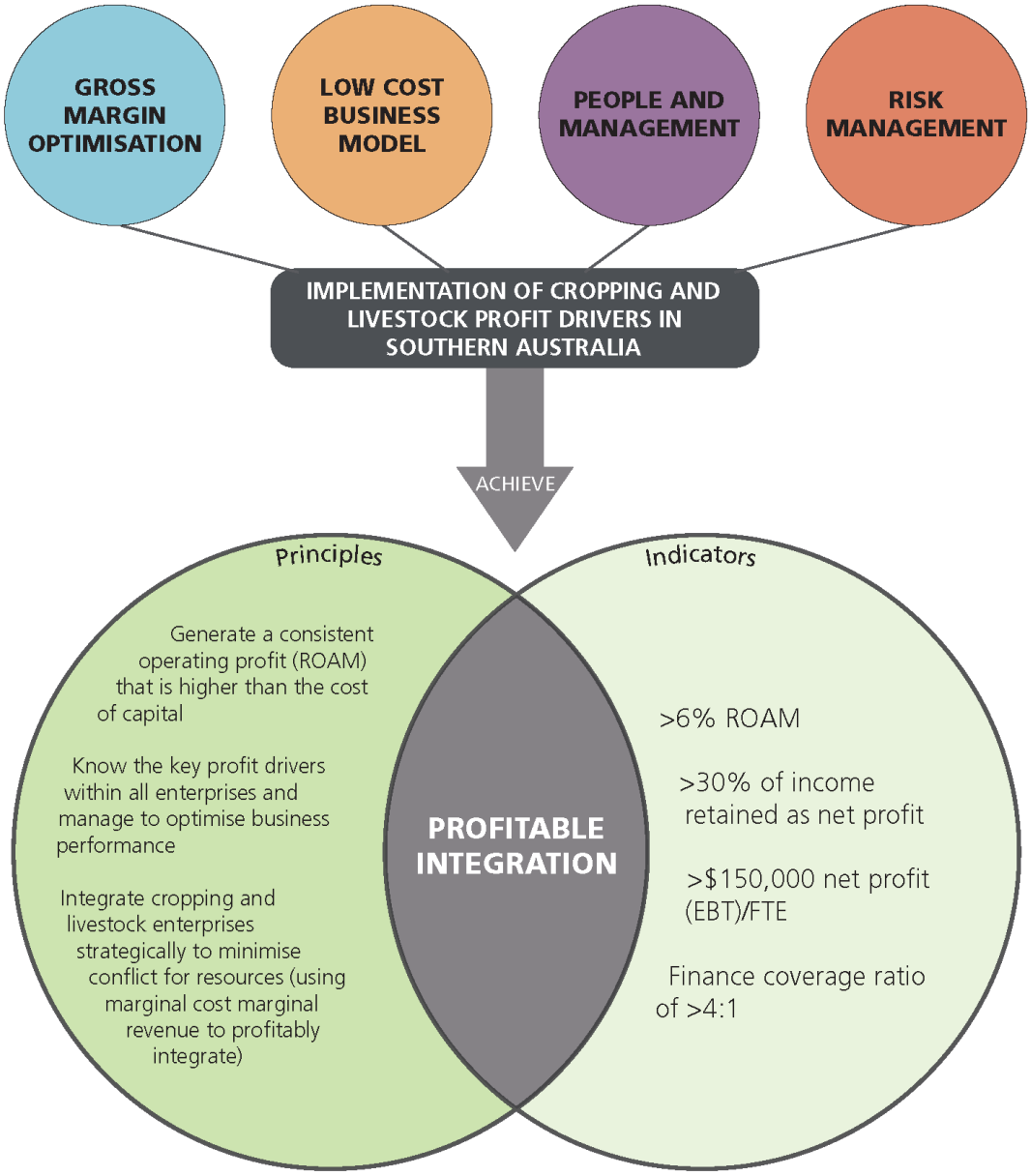
8.6 Workshop evaluation

Supplied electronically

8.7 Post workshop evaluation

Supplied electronically

8.8 Tasmanian profit driver framework



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