final report

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External Review of the Tasmanian Red Meat Targets Program 2004-2009

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Abstract

An external review was undertaken to evaluate the impact of a five-year program aimed at increasing the profitability and sustainability of the red meat industry in Tasmania. The program, called Red Meat Targets (RMT), was a partnership between Meat & Livestock Australia, the Tasmanian Institute of Agricultural Research and the Tasmanian Department of Primary Industries, Parks, Water and Environment. The review found the program reached about one third of the target audience, lifted their skills, knowledge and adoption leading to enhanced on-farm performance. The partners of RMT received a return on their investment estimated as a benefit-cost ratio of 2.83. The review team recommends that the partners should continue to provide a program under the RMT brand aimed at increasing on-farm productivity and profitability with an enhanced systems approach but with clearer, measurable goals, an effective evaluation framework and more agribusiness involvement and co-operation.

Executive Summary

In 2004, Meat & Livestock Australia (MLA) partnered with the Tasmanian Institute of Agricultural Research (TIAR) and the then Tasmanian Department of Primary Industries, Water and Environment (DPIWE, now DPIPWE) to invest in Red Meat Targets (RMT), a program aimed at increasing the profitability and sustainability of the red meat industry in Tasmania through integrated research, development, extension and marketing projects. Red Meat Targets includes the Tasmanian beef, lamb and sheepmeat industries.

This review was commissioned by MLA to evaluate RMT from its inception until 2009 in order to evaluate the performance of the program and quantify industry impacts and outcomes. Specific objectives were:

1. Quantify industry outcomes of the program and their impact (productivity, profitability and/or sustainability) on the Tasmanian beef, lamb and sheepmeat industries, measured in a triple bottom line approach of financial, environmental and social benefits.

2. Quantify the relative contribution of the RMT sub-programs to achieving industry impact and outcomes in Tasmania, including an assessment of the relative impact of the various extension activities delivered through interviews with key producers on the RMT database.

3. Assess the effectiveness or otherwise of the operational structure for RMT.

4. Conduct a cost benefit analysis that will establish the return on investment from the program including funding leveraged from other sources.

5. Identify key limitations or barriers restricting the industry impact in Tasmania.

6. Recommend changes to the format or functioning of RMT including the level of private sector engagement that will help justify further investment by funding partners.

The review team utilised a range of techniques to gather and assess information for this review. These included primary data collection and analysis from within the program, secondary data from external sources, interviews with key producers and committees, a postal survey of participating producers, case studies, an agribusiness telephone survey and a cost benefit analysis. The comprehensive assessment allowed the review team to draw the following conclusions and recommendations.

RMT reached about one third of the 1159 red meat producers in Tasmania with the penetration higher for beef producers than sheep producers. If the sheep only producers were removed from those involved, the penetration was close to half of the remaining red meat producers. A high proportion of participating producers were able to lift their skills and knowledge, undertake adoption of largely existing technology and enhance on-farm performance. Environmental and social impacts were not able to be objectively quantified but subjective assessment indicated such benefits were captured.

The three partners of RMT received a reasonable return on their investment with a benefit-cost ratio of 2.83 on their funds. This benefit-cost ratio lies within the range of other investment analyses completed in the past few years for R&D programs associated with the red meat industries.

Tasmania benefited from the collaboration of MLA, DPIWE and TIAR with a streamlined delivery of projects and activities to red meat producers. However, the objectives and the core funding criteria should have been more securely negotiated and clarified at the commencement of the program to provide management with more certainty. As well, the evaluation plan, although promised in the RMT plans, was not produced and this oversight reduced the effectiveness of the delivery strategy, reporting and this review.

The RMT brand is well recognised within industry and its continued use should be considered. At the same time, some rationalisation of the wide array of delivery project brands could be considered to minimise confusion among potential clients. Consistent branding guidelines need to be negotiated at the outset of the program.

The Program Advisory Committee was effective but there was some confusion about its role and scope. Management and advisory roles of committees requires better definition and documentation before the commencement of any future program.

The program started with seven staff but this was reduced to two by the end of RMT as departing staff were not replaced. A staffing of two is not sustainable if the RMT delivery structure is to continue.

Although the future direction is a matter for the partners and the Tasmanian red meat industry, the review team strongly believe that there is still a great potential for a continued lift in knowledge and skills as well as on-farm productivity and profitability via a similar program to RMT.

Agribusiness groups were involved in the program and were favourably inclined towards RMT, but were not involved as partners or major participants. However, a greater role for agribusiness should be defined with any new program as current stakeholder resources are likely to be reduced.

The review team recommends that Meat & Livestock Australia, the Tasmanian Institute of Agricultural Research and the Department of Primary Industries, Parks, Water and Environment should continue to provide a program aimed at increasing on-farm productivity and profitability. The partners should enhance the systems approach utilised in the Winnaleah Towards 2000 project to recognise the mixed enterprise nature of most Tasmanian farms and the need to include social and environmental issues in the program. This approach may also increase the potential of attracting new funding partners, such as agribusiness and federal agencies.

The partners should continue a mix of projects and delivery methods to support skills and knowledge development to the industry as well as different opportunities to encourage productivity and profitability improvements. The partners should undertake market research to investigate whether there is a need to refine both the content and delivery mechanisms to reach an increased audience, especially among sheep producers.

A new program should have clearly defined, measurable objectives that match the funding that are available under the national R, D&E strategies. The roles and responsibilities of all partners require clear definition along with resource allocation. The partners need to negotiate an increase in staffing levels or develop a new model of delivery that more closely fits the resources available. A new program should also develop a comprehensive evaluation plan to guide the implementation and show progress against the objectives. This plan should detail its aims, implementation processes, budget and the responsible personnel. As well, more emphasis

should be placed on thorough economic analyses of the technologies promoted on both enterprise and total farm bases as well as environmental and social impacts.

The Program Advisory Committee should be continued to provide industry oversight of any on-farm program but the partners need to define and negotiate with industry stakeholders how wider industry issues (such as supply chains and Tasmanian branding and marketing) are dealt with.

The partners should consider the continued use of the Red Meat Targets brand while reducing the number of project brands to reduce confusion among current and potential clients.

Contents

Page

Acknowlegment....8

List of Acronyms in this Document....10

1 Background....11

2 Review Objectives....12

2.1 Review Objectives....12
2.2 Review Outputs....12

3 Methodology....13

3.1 Components of the Methodology....13

3.1.1 Primary data collection and analysis....13
3.1.2 Secondary data collection and analysis....13
3.1.3 Interviews of key industry partners....13
3.1.4 Producer survey....13
3.1.5 Agribusiness interviews....14
3.1.6 Case studies....14
3.1.7 Cost Benefit Analysis....14

3.2 Collation of the Components....15

4 Findings....16

4.1 Primary Data Collection and Analysis....16
4.2 Secondary Documents and Analysis....16
4.3 Interviews with Key Industry Partners....16

4.3.1 Program Advisory Committee....16
4.3.2 Management Committee....17
4.3.3 Staff....18
4.3.4 External industry observers....18

4.4 Program Outputs....18
4.5 Program Survey....19

4.5.1 Mail survey of producers....19
4.5.2 Grazing situation....20
4.5.3 Involvement with extension activities....20
4.5.4 Enterprise changes....20

4.5.5 Impact of changes 21
4.5.6 Impact of Red Meat Targets Program 21
4.5.7 Future 22

4.6 Case Studies 22
4.6.1 Case study participants 22
4.6.2 Involvement in RMT 23
4.6.3 Technologies Taken Up 23
4.6.4 On-farm Impact of Changes 23
4.6.5 Future plans for change 23

4.7 Agribusiness Interviews 24

4.8 Cost Benefit Analysis 24
4.8.1 CBA parameters 24
4.8.2 Number of producers benefiting from RMT 25
4.8.3 Extent of financial gain assumed 26
4.8.4 CBA results 27

5 Discussion on Success of RMT 28
5.1 Productivity and Profitability Impact 28
5.1.1 Knowledge and skills development 28
5.1.2 Practice change uptake 28
5.1.3 Impact on farm 28
5.2 Environmental and Social Impact 29
5.2.1 Environmental impact 29
5.2.2 Social impacts 29

5.3 Quantification of Return on Investment 29

5.4 Funding and Management Structures 30
5.4.1 Program planning 30
5.4.2 Program legal agreement 30
5.4.3 Evaluation 31
5.4.4 Performance of management 31
5.4.5 Performance of staff 31

5.5 Future Needs and Targets 32

5.5.1 Increasing on-farm productivity 32
5.5.2 Knowledge and skills development 32
5.5.3 Systems approach..... 32
5.5.4 Supply chains and the branding and marketing of Tasmanian red meat..... 33
6 Conclusions and Recommendations.....34
6.1 Conclusions..... 34
6.1.1 Program impact..... 34
6.1.2 Program management..... 34
6.1.3 Future priorities 34
6.2 Recommendations 35
6.2.1 Future directions 35
6.2.2 Future program management..... 35
Bibliography of Documents Cited 37
7 Appendices 39
7.1 Appendix 1 Red meat producer survey report..... 39
7.2 Appendix 2 Summary of case studies..... 39
7.3 Appendix 3 Summary of agribusiness interviews..... 39
7.4 Appendix 4 Cost benefit analysis report..... 39

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List of Acronyms in this Document

ABARE	Australian Bureau of Agriculture and Resource Economics
B/C Ratio	Benefit-Cost Ratio
CBA	Cost Benefit Analysis
CPI	Consumer Price Index
DPIWE	Tasmanian Department of Primary Industries, Water and Environment
DPIPWE	Tasmanian Department of Primary Industries, Parks, Water and Environment
IRR	Internal Rate of Return
MBfP	More Beef from Pastures Program
MLA	Meat & Livestock Australia
MMfS	Making More from Sheep Program
NPV	Net Present Value
PVB	Present Value of Benefits
PVC	Present Value of Costs
R&D	Research and Development
R D&E	Research Development and Extension
RMT	Red Meat Targets Program
TFGA	Tasmanian Farmers and Graziers Association
TIAR	Tasmanian Institute of Agricultural Research

1 Background

In 2004, Meat & Livestock Australia (MLA) partnered with the Tasmanian Institute of Agricultural Research (TIAR) and the then Tasmanian Department of Primary Industries, Water and Environment (DPIWE, now DPIPWE) to invest in Red Meat Targets (RMT), a program aimed at increasing the profitability and sustainability of the red meat industry in Tasmania through integrated research, development, extension and marketing projects. RMT includes the Tasmanian beef, lamb and sheepmeat industries.

The priority issues for RMT were identified at a stakeholder workshop in March 2003, and subsequently presented in a proposal by TIAR and DPIWE to MLA in November 2003 that addressed the following:

1. More meat from pastures
   - -Identify and demonstrate new grazing and meat production systems
   - -Market existing meat production knowledge through a mix of targeted and group delivery
   - -Determine and demonstrate animal production potential from current and future pasture species
   - -Develop new, better adapted pasture species and cultivars

2. Continuity of supply and supply chain relationships

3. Business and human development and industry support

4. Market opportunities including premium prices for Tasmanian red meat

An operational structure for the program was proposed, and MLA, DPIWE and TIAR subsequently signed a joint venture agreement on 1 October 2004 to give effect to RMT consistent with this structure. This phase of the program concluded in 2009.

This review was commissioned by MLA to evaluate RMT from its inception until 2009 in order to assess the performance of the program and quantify industry impacts and outcomes.

2 Review Objectives

2.1 Review Objectives

The purpose of the review is to:

1. Quantify industry impact (productivity, profitability and/or sustainability) and outcomes of the program to the Tasmanian beef, lamb and sheepmeat industries, measured in a triple bottom line approach of financial, environmental and social.

2. Quantify the relative contribution of the Red Meat Targets sub-programs to achieving industry impact and outcomes in Tasmania, including an assessment of the relative impact of the various extension activities delivered and interviews with key producers on the Red Meat Targets database.

3. Assess the effectiveness or otherwise of the operational structure for Red Meat Targets.

4. Conduct a cost benefit analysis that will establish the return on investment from the program including funding leveraged from other sources.

5. Identify key limitations or barriers restricting the industry impact in Tasmania.

6. Recommend changes to the format or functioning of Red Meat Targets including the level of private sector engagement that will help justify further investment by funding partners.

The review covers the initial 5-year period of the Red Meat Targets Program through to 2009.

2.2 Review Outputs

The key output from this review is a report outlining:

1. Assessment of industry impact (productivity, profit);

2. Assessment of program impact on environmental/sustainability and social components;

3. A cost benefit analysis (CBA) of the program's investment versus industry outcomes;

4. Quantification of the value & constraints of the individual respective program components to achieving industry impact; and

5. Recommendations for further investment and improvement to the program to achieve higher levels of industry impact, including requirements and methodology to effectively measure impact on industry profit, productivity and sustainability of future activities.

3 Methodology

3.1 Components of the Methodology

The methodology chosen used a range of complementary data collection processes to meet the specific outputs required for this review.

3.1.1 Primary data collection and analysis

The material collected and analysed here included reviews of the research, development and extension needs and priorities of the red meat industry in Tasmania, a business plan and funding proposals, an agreement between the partners, annual reports, project reports and a draft final report.

3.1.2 Secondary data collection and analysis

Further data was sought from outside RMT. As the program had no formalised evaluation strategy plan, other organisations, such as MLA, DPIPWE and TIAR, may have been able to supplement the evidence of success through activities such as surveys, feedback sheets for activities or benchmarking activities.

3.1.3 Interviews of key industry partners

Interviews were undertaken with the RMT Management Committee, six current and former Program staff and five members of the RMT Advisory Committee (a feedlot manager, a processor, a retail butcher and two producers) to ascertain how these interviewees viewed the success of the program and individual components, its management structure, the makeup and workings of Advisory Committee and the future direction of the any future red meat programs.

To widen the pool of views, especially on the future directions, interviews were taken with two private agricultural consultants who were involved in the program and the Chair of the SheepConnect Tasmania program.

3.1.4 Producer survey

A survey was undertaken of producers who had attended at least one RMT activity and whose name was recorded on the program database.

The contractor's preferred survey technique was by telephone to provide a high response and a random sample. However, after legal advice to RMT that contact details could only be provided to the contractor after producers gave written permission, the telephone survey was abandoned and a mail survey was undertaken.

A random sample of 200 growers were selected from the database and sent surveys by RMT, together with a stamped and return addressed envelope. A follow-up letter was sent a fortnight later.

The survey collected both qualitative and quantitative information. Participants were asked about their level of participation in RMT activities and provided self assessment s on how their involvement influenced their knowledge, actions and any subsequent impact.

The results were collated, statistically analysed, where appropriate, and a stand-alone survey report provided.

3.1.5 Agribusiness interviews

Seven agribusiness personnel, selected by a RMT staff member, were interviewed about their involvement in RMT, their perception of the impact on their producer clients, how they may have been more fully involved in the current program and in any future red meat industry program.

As already mentioned under 3.1.3, two agricultural consultants and the Chair of the SheepConnect Tasmania program were also interviewed.

3.1.6 Case studies

Case studies were undertaken with seven participating producers to provide more in-depth details on adoption of the technology on offer and grounded data for the cost benefit analysis. The names of the case study interviewees were supplied by RMT and were selected as they had participated in a wide range of activities.

3.1.7 Cost Benefit Analysis

The cost benefit analysis (CBA) was undertaken to investigate the impact of the program utilising information from the survey, case studies and research and demonstration results. Particular attention was given to the numbers of producers making management changes, the impact of those changes on farm profits and what the counter factual situation may have been.

The review brief asked for impact of the various subprograms on the overall result. However, as minimal work occurred outside Sub-program 1 on pasture production and utilisation, an attribution to various sub-programs, other than Sub-program 1, was not feasible.

The CBA has been undertaken for both total costs of the program over the five years (MLA, DPIWE and TIAR) as well as those for MLA only. In the case where only MLA investment was considered, only a proportion of the total benefits valued has been attributed to MLA. This proportion is based on the costs contributed by MLA as a fraction of the total investment.

The Present Value of Benefits (PVB) and Present Value of Costs (PVC) were used to estimate investment criteria of Net Present Value (NPV) and the Benefit-Cost Ratio (B/C Ratio) at a discount rate of 5%. The internal rate of return (IRR) was also estimated. The PVB and PVC are the sums of the discounted streams of benefits and costs. The discounting is used to allow for the time value of money, and the discount rate of 5% (in real terms) is that specified in the guidelines for CBA issued by the Council of Rural Research and Development Corporations.

Some sensitivity and breakeven analyses have been carried out for those assumptions considered to be the most uncertain.

3.2 Collation of the Components

The primary and secondary data collection and analysis, together with the interviews of the stakeholders provided the background for the assemblage of the content of the producer survey. All the above components, plus the results from the survey and case studies, provided the content for the cost benefit analysis.

The qualitative and quantitative results informed the analysis of the RMT and provided the basis for the recommendations for any future red meat industry program in Tasmania.

4 Findings

4.1 Primary Data Collection and Analysis

The program documents show a comprehensive summary of past reviews (Rural Development Services 2003) and an extensive priority planning process across the Tasmanian red meat industry during 2003/04. An ambitious business plan (Thompson and Sparrow 2003) and a project application (Thompson et al 2003) (with a proposed budget of $10.2m over 5 years split equally between partners) was developed to meet across industry issues of pasture productivity, meat supply chain issues, business and human development and marketing opportunities for Tasmanian meat. The outcome aimed for was to increase the enterprise gross margin of red meat producers by 10% by 2009. An advisory panel with representation across the whole industry was selected to guide the program.

The final five-year RMT expenditure report indicated a final investment of only $2.5m and the draft final report indicates that almost of that expenditure was utilised in Objective 1 "More Meat from Pastures". However, nowhere in the documentation has this reduced budget and program delivery been documented or explained. Indeed, the annual reports (2005, 2006 and 2007) and the draft final report (Miller et al 2009) still articulates the four original objectives while largely reporting only against Objective 1.

The legal agreement signed by the three partners indicated that MLA agreed to a maximum allocation "of up to $450,000 a year for five years on projects approved by the Company which are part of the annual operating plan and which are consistent with the (MLA) business plan". The other two partners pledged a minimum allocation and other resources on a project by project basis to match MLA's contribution. The final MLA program funding was $720,000 consisted of 12 project contracts.

A key part of the overall RMT strategy that was missing was the evaluation plan. This plan would have helped to refine the objectives, defined the program improvement process and provided clear guidelines on what needed to be reported in the annual and final report. A database of the contact details was maintained and feedback sheets from individual activities were collected and collated. There was no evidence that the overall RMT aim to increase the enterprise gross margin of red meat producers by 10% by 2009 was evaluated.

4.2 Secondary Documents and Analysis

A range of secondary documents were sought from the partners and other sources to garner any indirect evidence of impact of RMT. Although freely given by the suppliers, the documentation did not provide much information which was not already available through the program.

4.3 Interviews with Key Industry Partners

4.3.1 Program Advisory Committee

The interviews of the Advisory Committee members produced two views on what the members felt the role of the Committee was. The first view was to set the direction and monitor the implementation of the on-farm research, development and extension and this was broadly supported by all those interviewed. The second view was that the Committee should act as an industry forum to address industry issues and to lobby for funds to implement possible solutions.

This second view was held mostly by those representing post-farm sectors while the producers and the managers generally felt that this was not the role of the Committee. The producers and managers recognised the need for this industry role but felt this was more of a political role for others to drive such as the Tasmanian Farmers and Graziers Association (TFGA).

The viewpoint of the interviewees on the success of the Committee revolves around the perception of the aim. If the view was the narrow role to manage on-farm RD&E, then the Committee was thought to be successful and should continue into any new phase of the program. If the view of the aim was to be a broader industry forum, then the conclusion was that it was less successful and this was seen in the drop-off in attendances of some these industry committee members. Again, the view of the membership of any future committee divided along similar lines with the producers and management generally favouring more producers while the post-farm members would like less producers involved as they felt the producers dominated the discussion and concentrated on the on-farm issues at the expense of post farm priorities.

The on-farm RD&E program was subjectively assessed as successful, especially the Winnaleah Towards 2000 project, but the post-farm members felt the lack of progress on such issues of supply chain and marketing detracted from the performance of RMT.

There was general agreement that the Tasmanian industry should continue to address on-farm productivity while a number of the members raised the issue of improved supply chain management to address the lack of winter livestock turnoff and the need to market Tasmanian meat as a differentiated product. These were aims of the original program but were not addressed as no funding was allocated to these objectives.

The MLA representative generally agreed with the above findings and concurred with sentiments that the committee should be about managing the on-farm research and development and that the industry issues could be addressed by state and national industry bodies. Additional commentary indicated that the strategic nature of the program had lost focus and that any new advisory committee should include an outside researcher, maybe from interstate, to help provide strategic focus. He felt new work should be systems based and linked to the new national RD&E strategies.

4.3.2 Management Committee

The Management Committee, members from both TIAR and DPIWE, felt that the aim of their Committee was to manage the program implementation, to formalise the previously informal links that existed between the two organisations and to build a better relationship with MLA. The Committee deemed the program achieved these aims very well.

The Committee took a pragmatic approach to the fact that limited funds were available for any of the aims other than for sub-program 1 which concentrated on on-farm productivity and also the evaluation was let slip for the same reason. The short-term nature of external funding, coupled with the matching allocation from the other two partners, led to uncertainty and numerous staff left for other opportunities.

The Management Committee subjectively considered the program was 80-90% successful in achieving its on-farm aims. Highlights included the Winnaleah Towards 2000 project, Grazing Winter Wheats project and the Financial Benchmarking project. These projects supplied producers with quantification of what production was possible and anecdotally lifted the bar on current perceptions.

The Committee considered any future phase should build on the RMT brand and concentrate on increased production and utilisation (TIAR's strength) while other issues of animal welfare, national water policy, climate change and breeding temperate pasture species could feature. The members of the Committee are closely watching developments in the national RD&E strategy for impact on Tasmania

4.3.3 Staff

Four of the six current and past staff interviewed were also on the Management Committee so many of the issues had been previously raised. As mentioned earlier, a number of RMT staff had moved on and one was deceased.

The reduced and the short-term nature of the funding was raised as a real concern and this was linked to a reduction of staff numbers (down from seven to two during the term of the program) without the capacity to replace them. Staff mentioned that they would have liked more access to the Advisory Committee for two-way communication.

4.3.4 External industry observers

The perception of the Chair of the SheepConnect Tasmania program was that the emphasis of the RMT was mainly on cattle rather than sheep which led to the majority of the activities being in the north of the state. This view was shared by one of the two agricultural consultants. Both thought this balance should be rectified in any further programs, given the importance of lamb and sheep meat to Tasmania.

As well, the Chair of SheepConnect Tasmania felt that there should be closer contact between the advisory panels of both programs, especially on sheep issues, given that Tasmania is small and the number of staff in both programs is low.

One consultant, whose company was involved in writing the initial business plan for RMT, felt that there was too much emphasis on delivery of activities and not enough emphasis on defining the target audience/s, what outcomes were desired, the best way/s of delivery and evaluation evidence to show progress towards these targets. He also felt there was a requirement to do market research on the needs of individual producers and how the products on offer can assist to meet their business goals.

All three felt that future work will need to be highly targeted and with a more of a systems approach to the issues facing producers. As resources were reducing, delivery methods will need to be more flexible and must recognise existing networks and relationships rather than producing new ones.

4.4 Program Outputs

The program undertook a series of research, development and extension activities and the final reports are documented in the bibliography

The Winnaleah trial (Williams 2008) combined the use of fertilisers, rotational grazing and irrigation to explore the potential of liveweight gain in beef cattle. Two other trials, utilising prime lambs, investigated the potential of grazing dual purpose winter wheats (Miller et al 2009) and

new ryegrass species under irrigation to lift liveweight gains. Further duplicates of these trials were demonstrated at other sites.

Other trials were undertaken on the causes of lamb wastage, a feedlot investigation on the growth rates of a range of steers was undertaken and a demonstration on the best management practices to increase lambing percentages. A desk top review assessed the suitability of existing simulations models at the farm and regional level in Tasmania (Statham and Dingemanse 2006).

A full production and financial benchmarking was undertaken for three years on about 25 properties to provide some industry base line figures and to identify opportunities for improvement. A further desk top audit was undertaken to test simulation models at the farm and regional level in Tasmania.

RMT delivered 218 extension activities with a total attendance of 4747 at these events. These ranged across all aspects of pasture production and utilisation and were in conjunction with a range of industry and commercial partners.

4.5 Program Survey

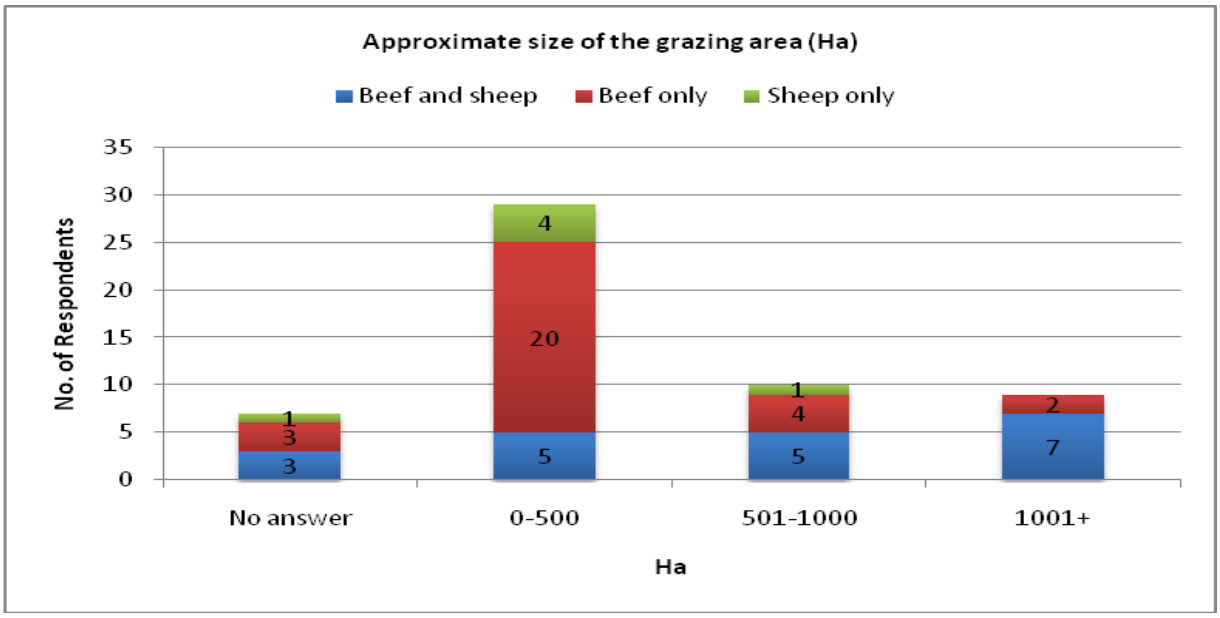
4.5.1 Mail survey of producers

There were 55 respondents from the mail survey of 200 red meat producers who had some contact with RMT. Of these, 20 indicated they were engaged in both beef and sheep production, while 29 were beef only and six were sheep exclusive. Sheep only farms averaged 400ha in grazing area, beef only averaged 440ha while beef and sheep averaged 1340 ha. The full results of the survey are contained as an attachment to this report in Appendix 1 and data is drawn from the survey to inform the cost benefit analysis and the discussion on this report. In this section, the key findings from the survey are reported. Responses were analysed according to whether respondents ran beef, beef and sheep or sheep only.

4.5.2 Grazing situation

The following graph shows the sizes of the grazing areas of respondents across these three groups.

Table 1 Grazing Areas (ha) of Respondents across the Three Groups



The majority of respondents in all production groups have a quite high level of confidence (overall rating of 7 out of 10) that the red meat industries have a profitable and secure future. Respondents also had a very high awareness (average rating of 8.5 out of 10) of the name "Red Meat Targets" prior to the survey. This confidence has generally remained unchanged or has increased over the last four years. This is despite producers having been impacted by drought and other weather conditions; low and fluctuating prices; increasing costs of production; as well as pests, wildlife and disease. Extension programs and initiatives together with benchmarking and monitoring practices had positive impacts and helped some producers with better business management and improved grazing and irrigation practices. Good prices and strong demand for lamb and mutton has also impacted positively on producer confidence.

4.5.3 Involvement with extension activities

Producers see extension activities as providing a forum for improved understanding and increasing the awareness of new ideas. They believe that there is further potential for extension activities to be even more useful in the red meat industry. As a result of being involved in extension activities, producers (specifically beef only), mentioned improved understanding of implementing better pasture and grazing practices, better awareness of business management, benchmarking and monitoring, and measuring practices to improve profitability. Some mentioned that they had gained knowledge from visiting other farms in the state and by sharing ideas with others.

4.5.4 Enterprise changes

Over the last four years, there appears to have been a profitability driven shift in producer thoughts about their farm business and management with more commercial driven approaches.

Both beef & sheep and beef only producers highlighted changes to grazing systems, as well as pasture management and quality to improve productivity and profitability. Beef & sheep producers particularly looked at making changes to the makeup of their livestock, with some movement away from beef cattle production to sheep, or from wool to lamb. 'Sheep only' producers were specifically concerned with developing drought management strategies. Producers also tended towards a more hands on management style, increasing monitoring, measuring and benchmarking.

A variety of activities and information sources influenced changes made by producers. These included programs (such as Prograze, Towards 2000 and the More Beef from Pastures program), field days and information days. Farm trials were also mentioned, particularly the Winnaleah Field Days and projects. Discussion group meetings such as the Circular Heads Beef Group were also a source of information and shared ideas for producers.

A wide variety of other information sources including newsletters, newspapers, magazines, television and radio were found to be useful in obtaining information about livestock and pasture management. Others sources included consultants and suppliers as well as field days, trials and seminars. The ability to gather information from a range of different sources seemed to be an important factor for many producers.

4.5.5 Impact of changes

As a result of changes made following involvement in RMT, producers have subjectively seen benefits in the environmental, productivity, economic and social areas. For the majority of producers surveyed, productivity benefits have been higher in the past fours years than the fours years previous. Drought however, has negatively affected the productivity gains of some producers.

Environmental benefits seen included improved and more persistent pasture and increased ground cover; better water quality (less salinity problems), improved pest management, more sustainable systems and increased soil biological activity.

Productivity benefits included increases in stock numbers, sales, carrying capacity and profit per hectare were all mentioned as direct results of management changes. Changes to grazing pasture management were also assessed as having also brought positive results by improving calf/lamb weights and increasing meat quality.

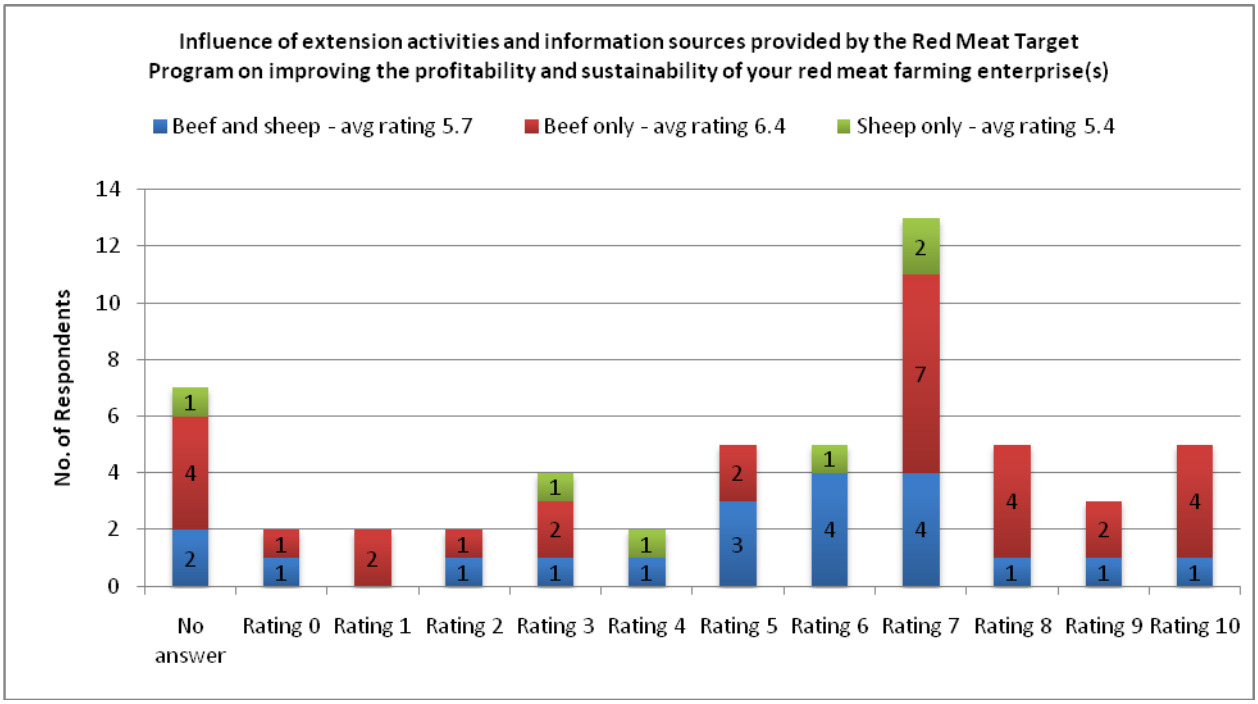
Economic benefits of higher productivity (improved stock and pasture management) have direct economic impact including more kilograms of beef per hectare and positive meat sheep sales (with better prices due to lamb shortages and higher prime lamb/mutton prices). Beef producers are concerned that although there may be higher production, there has been lower return with the reduction in beef prices.

Social benefits, particularly relating to improved management systems, included reduced stress, extra time, higher standards of living, recognition, peer industry support and encouragement of good performance. In contrast, a couple of producers felt that the changes required extra time spent on management.

4.5.6 Impact of the program

Producers rated the RMT (its extension activities and information sources) as having a moderate (average 6/10) influence on improving producers' profitability and sustainability. The range of responses is shown in the graph below.

Table 2. Ranking of the Program Influence on improving Producers' Profitability and Sustainability



It was noted that the program provided awareness of and access to new ideas and challenges as well as access to balanced and unbiased information. It was noted that it was important to provide extension to proactive producers in order to progress the industry. There was some concern however, that generalised systems may not always work on diverse and different farms.

4.5.7 Future

Producers felt that it was important for existing programs to be continued and expanded and for more support to be provided for R&D and extension activities. Extension services were seen as particularly important as a communication link between research and farmers. The importance of the industry justifying these programs to the state was noted by a number of producers. There was also a call for the expansion of delivery services to a wider area (e.g. King Island) and for further engaging mixed-enterprise producers.

4.6 Case Studies

A full summary of the seven case studies is given in Appendix 2

4.6.1 Case study participants

All seven case studies had at least two enterprises with a number also undertaking cropping and vegetable production which provided the capacity to change the enterprise mix depending on

market conditions. Rainfall ranged between 650mm annual average up to 1200mm. Two case studies in the lower rainfall range had access to irrigation

4.6.2 Involvement in RMT

A wide range of RMT activities were attended with one grower only attending one activity up to a maximum of five activities. Winnaleah "Towards 2000" was mentioned by five case study producers and was the most influential activity for three interviewees to change their production system.

4.6.3 Technologies Adopted

Six case studies mentioned adopting or intensifying rotational grazing while others mentioned the uptake of pasture budgeting, change in mix of fertilisers, winter wheat grazing, change in time of lambing, financial benchmarking and increased weight of bought-in trade cattle.

4.6.4 On-farm Impact of Changes

Five of the seven case studies indicated that their on-farm records indicated that they had increased kilograms of red meat liveweight turnoff over the last three years while another expressed his increase in terms of reducing the cost of production per kilogram by a third over the same period. The seventh case study indicated that he had not increased turnoff by grazing winter wheat but had reduced his supplementary feed bill by an unspecified amount.

Annual liveweight turnoff of red meat for the seven producers ranged from 200kg/ha in the lower rainfall areas up to 500kg/ha in higher rainfall areas.

Increased input costs ranged from none to small, unspecified increases. Some increased inputs included more watering points, electric fencing and changes in fertiliser use.

Environmental impacts were negligible while producers felt risk factors were largely decreased by better understanding of feed requirements and predicting the availability of pasture out to six weeks in advance.

The case study producers indicated that their on-farm changes had had minor impact on their neighbours.

4.6.5 Future plans for change

Most of the case study producers intend to fine tune their systems as they believe that there are still major gains to be made using these technologies. Individual producers mentioned other changes, such as improved pasture species, changing the type of rams used, and looking towards the dairy industry for hints on pasture utilisation.

4.7 Agribusiness Interviews

A full report of the agribusiness interviews is found in Appendix 3.

The seven participants (retail and fertiliser suppliers and one agricultural consultant) involved in this review of the RMT were generally positive about its achievements. All were largely aware of the program and had attended or been involved in one or more of the extension activities. The Winnaleah towards 2000 demonstration site was rated the most useful activity (average rating of 8.8 out of 10) followed by the MLA Meat Profit Day (average rating 8).

The main impacts of the program on producers were noted as being improvements in their awareness and understanding of different pasture species and blends, fertiliser use as well as grazing strategies. The main impacts of the program on participants' organisations were highlighted as being financial, as a result of increased sales of infrastructure and better quality inputs. Participants also noted improvements in knowledge as they took the opportunity to up-skill their staff and their ability to better advise and inform producers.

Most participants were happy with their level of involvement in the program and were interested in future participation in red meat programs in Tasmania.

4.8 Cost Benefit Analysis

The full cost benefit analysis report is found in Appendix 4.

4.8.1 CBA parameters

The CBA required a series of assumptions on the impact of RMT. . These assumptions have been made on the basis of information drawn from a number of sources.

These include:
* Australian Bureau of Agricultural and Resource Economics;
* Annual reports of RMT;
* Producer survey; and
* Case studies.

The financial investment made by MLA, DPIWE and TIAR in RMT over the five years was $721,110, $1,078,700 and $698,190 respectively. As mentioned earlier, this investment was made almost totally in sub-program 1 (pasture production and utilisation) with minimal servicing of the other three planned sub-programs. Hence, an analysis comparing investment criteria across the four intended investment areas could not be completed.

The major end benefit being pursued by this investment has been that participating Tasmanian red meat producers have been stimulated to change management practices. This has provided them with a range of benefits derived from increased feed production and quality as well as better utilisation of what has been produced. This has resulted in some cases in the ability to adopt higher stocking rates as well improvements in animal performance per head. The benefits have been produced, in the main, by application of existing knowledge rather than new knowledge developed by the program.

The benefits identified from the investment are predominantly private benefits, namely benefits to red meat producers in Tasmania. Some public benefits have been delivered however in the form of the environmental and capacity building benefits, and improved efficiency of application of government R&D funds. There may be some small spillover benefits to other enterprises (e.g. cropping and wool) on the farms of red meat producers.

Benefits have been derived also from the collaborative nature of the program and the joint funding model. Integration of activities funded have been more effective and focused. There has been less wastage of resources and better outcomes via the improved coordination. Capacity building benefits for producers have also been delivered, particularly through benchmarking and the holistic approach to management promoted. These benefits may facilitate an increased capacity of producers to integrate new technologies available in the future.

The benefit from the investment that is valued in this analysis is the improvement in profit by some Tasmanian red meat producers. The other benefits have not been valued, largely due to the difficulty in establishing their extent and in gathering supporting evidence of the linkages between the program and the outcome leading to the benefit.

4.8.2 Number of producers benefiting from RMT

The average number of broadacre farms in Tasmania over the period 2005 to 2009 was 1,159 (ABARE 2010). According to the ABARE categories of broadacre farms this total comprised 532 beef only farms, 323 sheep only farms, 234 beef and sheep farms, and 70 mixed livestock farms (above an estimated value of agricultural operations of $40,000 per annum).

The number of red meat producers involved in some way with RMT was 400 and their details retained on the RMT database. Involvement included one or more of the following: attending field days, receiving newsletters, attending training courses, undertaking benchmarking etc. This meant that the reach of RMT was quite wide with 35% of all Tasmanian broadacre producers involved in some way. If the beef only and beef and sheep producers were included, this percentage would increase to 52%.

Limited information on the number of producers changing practices was elicited during the program through exit surveys of producers attending program activities. Both the 2006 and 2007 Annual Reports mention that 30% or more of respondents at activities said they had made some changes as a result of previous activities.

The producer survey reported in the current review provided written responses from 55 producers out of a survey sample of 200 producers drawn at random from the 400 producers who were involved in RMT. Of these 55 producers, 49 were beef only or beef and sheep producers, the subset of red meat producers considered the central focus of the CBA.

Of these 49 producers, 25 (51%) provided some details on the type of benefit gained from making management changes and 22 (45%) stated that their productivity benefits were higher in the past four years. Also, of the 49 beef only and beef and sheep producers, 23 (47%) gave an economic benefit rating in the range 5 to 10. Based on the above information, it is assumed for the CBA that 22 of the beef only and beef and sheep respondents to the survey made some significant management changes that impacted positively on their productivity and profits.

Nothing is known about whether management changes were made by the 145 non-respondents to the producer survey or the other 200 producers who were not surveyed. However, it is likely that some of these also made management changes. The detail behind the assumption that a

further 80 beef only and beef and sheep producers would have made changes as a result of the program is presented in Appendix 4.

An interesting finding from the seven case studies was that some neighbours/other producers may have made changes as a result of observing and discussing options with the case study farmer. After allowing for these additional producers (detailed in Appendix 3), the total number of producers affected positively by RMT was assumed to be 112 out of a total population of beef only and beef and sheep producers of 766. The following table summarises the composition of total number of producers assumed to have benefited.

Table 3: Assumptions Regarding Beef only and Beef and Sheep Producers Making Management Changes that Resulted in Positive Productivity Changes and Profits

Group (beef only and beef and sheep producers only)	Number	Number Making Management Changes	Proportion Making Management Changes (%)
Respondents to producer survey	49	22	45
Non-respondents to producer survey	129	29	22.5
Non-surveyed producers in contact with RMT	178	51	29
Producers not in direct contact with RMT	410	10	2
Total	766	112	15

4.8.3 Extent of financial gain assumed

The average net cash income for Tasmanian beef only and beef and sheep farms over the past five years was $34,601 (ABARE 2010) derived from an average cash income of $239,101 with an average cash cost of $204,500.

The review case studies suggest that, conservatively, the interviewed producers were obtaining about a 20% increase in turnoff or gross income. The case study farms probably are in the top echelon of success as that probably was why they were nominated for assessment. Hence a reduced estimate of impact is used for the analysis. The assumption made here is that the average gross cash incomes for the farms benefiting would have increased by 10% and costs by 5% for both beef only and beef and sheep farms.

Some allowance has to be made for the possibility that some of the changes made by producers would have occurred without RMT and that some of the decisions to change would have been only partially influenced by the program. Practice change decisions are complex in their scope and timing and are usually the result of a number of factors that build on the existing frameworks and state of mind. It is assumed that in the absence of the program, there would still have been some changes made.

The producer survey reported that the RMT was considered to have a "moderate" influence by the respondents. On a scale of 0 to 10 the average rating given was 6.0. While this is not a direct index of attribution, it does give some indication of the impact of the program. It has been assumed that the attribution of the benefits assumed to RMT was 60%.

It was not possible to survey other producers who were not recorded on the data base. If this had been done, a more accurate assessment of the number making changes associated with RMT could have been made by the use of such a control.

Due to the nature of the program and its emphasis on demonstration and training, the capture of benefits is assumed to have been relatively rapid. Benefits are assumed to commence in the year ended June 2007 and rise to a maximum in the year ended June 2011. These maximum benefits are assumed to persist for five years and then gradually decrease to zero over the next ten years as knowledge gained is not re-enforced and new producers do not receive additional training and encouragement (in both the with and without scenarios).

4.8.4 CBA results

All past costs and benefits were expressed in 2009/10 dollar terms using the CPI. All benefits after 2009/10 were expressed also in 2009/10 dollar terms. All costs and benefits were discounted or compounded to 2009/10 using a discount rate of 5%. The discount rate of 5% was selected in line with the guidelines of the standardised evaluation process adopted by the Council of the Rural R&D Corporations (CRRDC). The standard analysis ran for a maximum of 25 years from the last year of investment (2008/09).

Investment criteria of Net Present Value (NPV), Benefit-Cost Ratio (B/C Ratio) and Internal Rate of Return (IRR) were estimated. The NPV is the difference between the Present Value of Benefits (PVB) and the Present Value of Costs (PVC). Present values are the sum of discounted streams of benefits and/or costs. The B/C Ratio is the ratio of the PVB to the PVC. The IRR is the discount rate that would equate the PVB and the PVC, thus making the NPV zero and the B/C ratio 1:1.

Results are presented for the total investment in the program as well as for MLA alone. The attribution of the total benefits stream to MLA is based on the proportion of total costs over the five years in 2009/10 $ terms that has been contributed by MLA (estimated at 29%). The estimates of the investment criteria are reported in the following table.

Table 4: Investment Criteria for Investment in RMT (discount rate 5%, 25 year benefit horizon)

Criterion	Total Investment	MLA Investment
Present value of benefits (m$)	8.66	2.53
Present value of costs (m$)	3.06	0.90
Net present value (m$)	5.60	1.63
Benefit-cost ratio	2.83	2.80
Internal rate of return (%)	27.1	25.7

Sensitivity analyses show the investment criteria are not particularly sensitive to the discount rate, largely due to the relatively early returns captured by the program and the investment criteria are fairly robust regarding the profit increase.

5 Discussion on Success of RMT

5.1 Productivity and Profitability Impact

5.1.1 Knowledge and skills development

Approximately one third of Tasmania's red meat producers were involved in RMT, mostly in the north of the state in higher rainfall areas. If the sheep only producers were removed from the sample, then the penetration was around half. Producer respondents of the review survey mentioned that they had a better understanding of pasture and grazing management and increased capacity in the areas of the business skills of benchmarking and monitoring. Although these skills do not directly lead to changed practices, they are an important stepping stone along the way. Producers also felt that RMT had the potential to continue this process.

5.1.2 Practice change uptake

Changes in grazing management and as well as pasture management were highlighted by both the survey and case studies as key areas of adoption resulting from RMT. Most interviewees across the review mentioned the Winnaleah Towards 2000 as a key influence here.

Of interest was that Winnaleah's best management system of the productive pastures, high fertiliser use, irrigation and intense rotational grazing on small plots did not stop producers adopting only those technologies that they felt were appropriate for their farms. Winnaleah produced 1980 kg/ha of red meat livewight gain while the case study participants were operating at between 200 to 500 kg/ha even after lifting their production by 20-30% with minimal increases in inputs. It would be interesting to see what the non-adopters among the RMT participants and those outside the program thought about the best management practices approach to demonstrations. Some case study producers mentioned that the demonstration would have been more credible if the site had been in a less favourable environment and without the option of being able to introduce and withdraw livestock as conditions changed. Exploration of attitudes of producers should be given consideration in the planning phase of any new program.

5.1.3 Impact on farm

Most case study producers reported an increase in turn-off of red meat liveweight/ha and profitability of between 20-30%. The majority of survey respondents indicate their production was higher for the last four years than the previous four years, even allowing for the impact of the drought. Confidence was high that further increases were possible and confidence in the future of red meat enterprises was high. The assessment has been made one year after the end of a five year program and this has given a greater opportunity for changes to occur and for impacts to be measurable. Indeed, most of the practice change among case study producers started three years into the program, allowing three years for complete implementation and impact to surface. Most extension projects are three years in length and evaluation is done within this timeframe. This shows the difficulty of quantifying measurable practice change and impact for these projects.

One case study producer indicated that the production and financial benchmarking project had had a big impact on his business. In the first few years of such benchmarking, the major

beneficiaries are likely to be the participants. It seems, from the experience in Victoria, that it takes about five years before industry stakeholders starts to benefit from the analysis of the between year trends.

5.2 Environmental and Social Impact

Environmental and social impacts are more difficult to measure than productivity progress as they tend to be more long term and subjective in assessment. As there were no evaluation processes put in place to monitor these items, there were no objective RMT measures to assess the extent of impact or to gather supporting evidence of the linkages between the program and the outcome leading to the benefit. Still a considerable amount of favourable, subjective evidence was gathered.

In future programs, the partners need to clearly define what measures are required to satisfactorily measure progress on environmental and social issues and how much funding from the total budget should be allocated to this task.

5.2.1 Environmental impact

Environmental benefits seen include subjective assessment of improved and more persistent pasture and increased ground cover, better water quality (less salinity problems), improved pest management, more sustainable systems and increased soil activity.

5.2.2 Social impacts

Social benefits, particularly relating to improved management systems, include reduced stress, extra time, higher standards of living, recognition, peer industry support and encouragement of good performance. The benefits identified from the investment are predominantly private benefits, namely benefits to red meat producers in Tasmania. Some public benefits have been delivered however in the form of the capacity building benefits, and improved efficiency of application of government R&D funds.

5.3 Quantification of Return on Investment

The results of the CBA show a positive return on investment in the program with a benefit cost ratio of 2.8 to 1. For comparison purposes, this result falls within a range of other recent, similar analyses for the red meat industry (see Appendix 4 for further details).

The investment criteria for RMT were not particularly sensitive to the discount rate, largely due to the relatively early returns captured by the program. Also, the investment criteria are fairly robust regarding the assumptions of the income and cost changes. In fact the benefits assumed can be reduced from 10% to a 3.5% increase in gross cash income and from a 5% to a 1.75% increase in cash costs, and the investment will still break even. Likewise, given the current assumptions, the number of red meat producers benefiting can fall from the 112 assumed to 40 and the investment would still break even. The attribution factor to RMT could fall from 60% to 21% and the investment would still have broken even.

These sensitivity results provide a high likelihood that the investment performed well in terms of its financial impact on producers. If the environmental and social benefits defined were able to be valued the rate of return could have increased.

While the results of the cost benefit analysis were positive, the results would have even higher credibility if improved information on the number of producers changing and the associated impacts had been able to be assembled during the program.

Also, the assembly of representative gross margin or whole farm budgets would have been useful to fully assess the profit implications of on-farm management changes made. The reporting of the program results focuses on gross parameter changes such as liveweight gain or beef produced per hectare. Many of these changes require added costs and their magnitudes are not reported. For example additional nitrogen, irrigation, fencing to allow rotational grazing and supplementary feeding were presumably required to implement many of the improvements. Any future red meat programs need to more adequately address costs of change as well as benefits.

5.4 Funding and Management Structures

5.4.1 Program planning

The initial review of previous plans and reviews and industry consultation was comprehensive and impressive and this led of a wide ranging and ambitious business plan that addressed four objectives across the both on-farm and post-farm sectors.

The estimated budget in the business plan was $10.5million over five years with the funding to be shared equally between MLA, DPIWE and TIAR. However, the final expenditure was $2.5million over same period. The original business plan objectives were retained in all the reports although almost all the expenditure occurred in Objective 1 on increasing pasture production and utilisation. This mismatch between stated goals and the actual delivery led to confusion amongst some stakeholders and should have been realigned at the commencement of the program.

A key development facing the program during its future planning is the National R D&E strategy which directs priority investment areas on a national, regional and local level. This will impact on what Tasmania is likely to be funded to undertake for the red meat industries.

5.4.2 Program legal agreement

The funding agreement indicated that MLA was to provide an annual funding allocation up to $450,000 per year, on a project by project basis, with matching funding by TIAR and DPIWE. The actual funding of RMT by MLA was $720,000 over the five years via 12 project contracts, mostly short term, which tended to place the emphasis on the delivery of these projects rather than on the achievement of the program goals. It also created uncertainty in the eyes of the staff delivering the projects as they did not know if the funding would be forthcoming following the current contract.

The reviewers felt that the legal agreement should have documented a specified level of core funding for the five years of the program by each partner as well as a process for planning and prioritising RD&E project areas that aligned with the program goals. This would have allowed RMT Management team more certainty in its planning and implementation of the program's objectives. The agreement would not have precluded the addition of extra funds to address short term priorities.

5.4.3 Evaluation

The lack of an evaluation plan was a major weakness of the program. A clearly defined and owned evaluation plan by all partners would have helped clarify the confusion in the objectives mentioned in 5.2.1. It would have provided a clear, self-checking and improvement plan for management and staff and would have focused the activities on the key objectives of the program and provided on-going and final evidence of its achievements.

It would have also allowed this review to be more succinct and accurate, especially in the CBA section.

5.4.4 Performance of management

There was general agreement by all stakeholders that the program was well managed and that the bringing together of MLA, DPIWE and TIAR resources into one combined effort for the red meat industry in Tasmania had been very worthwhile.

A major discussion point was around the role of the Program Advisory Committee. Most agreed that the Committee should have a role in the implementation of the on-farm research, development and delivery and had carried out this role well. The divergence in opinion occurred when considering whether this Committee should also address wider industry issues such as supply chain management and Tasmanian brand development.

One suggestion worth considering by the red meat industry in Tasmania is whether there is a need to develop an industry wide representative body to explore policy issues, including priorities for research and development. However the view was expressed that the implementation of the various research, development and extension projects should then be overseen by a smaller skills-based committee.

The brand of Red Meat Targets is strongly recognised, at least among the participants and agribusiness. There was no way of assessing its value for non participants. If the program is to continue, it may be worth considering a reduction in the number of brand names used as there are currently numerous program, project and partner brands competing in the market place. Current participants may understand the connections but potential new members are likely to be confused.

5.4.5 Performance of staff

All indications that staff were dedicated and performed well throughout the program despite the short-term nature of funding which tended to drive the direction of the activities.

One concerning component of the program was the steady of erosion of staff numbers from seven at the commencement of the program down to two at the end with no replacements employed. If such a decline cannot be reversed in the future, it will impact on how the any future program is structured and delivered and the need to ensure that the objectives match a secure resource capacity for the duration of any new program. It is also likely to limit industry funding attracted to Tasmania.

5.5 Future Needs and Targets

It is largely a role of stakeholders to decide the future direction of any red meats program for Tasmania. However, the reviewers have received many suggestions from the review participants on the future directions and these warrant discussion.

5.5.1 Increasing on-farm productivity

The Winnaleah trial, using a systems approach to increasing on-farm productivity warrants further consideration as most participants surveyed or interviewed felt that there was still room for major improvement as on-farm production is still in the 200-500 Kg of red meat liveweight produced per hectare. However, consideration should be given to placing these demonstrations in less favourable environments and on a more whole farm basis, maybe with an emphasis on sheep in the middle or south of the state to tap into a new audience.

Although some interest was shown by neighbours of the case study producers, the trickle out to other producers was small. While we do know the positive perception of the survey participants to increasing profitability through productivity gains, we do not know what other red meat producers think and whether a different extension approach needs to be undertaken to broaden the uptake among other producers.

The point is made strongly that the financial interpretation of any field trial needs to be much more sophisticated so that growers can get a real view of the true costs of increasing productivity. The suggestion is that this analysis should be done on an enterprise basis or whole farm basis.

Interestingly, two case study producers felt that they could learn a lot more from dairy farmers on pasture issues. Maybe a closer relationship between dairying and meat programs should be considered in the north of the state.

5.5.2 Knowledge and skills development

From the responses of producers and agribusiness, there is a continued need for improved skills and knowledge on productivity issues through Prograze and Prograze Updates and the more recent MBfP and MMfS. Although increased skill may not lead to immediate practice change, they are required if a more sophisticated production and utilisation system is to be adopted. Indeed, one case study producer volunteered that he had not utilised the fat scoring and pasture budgeting skills he learnt from Prograze and Prograze Update until he took up intensive rotational grazing as a result of a visit to the Winnaleah site.

5.5.3 Systems approach

A number of technical specialists and consultants mentioned the need to enhance the systems approach to improving red meat industry performance as many farms in Tasmania are juggling

multiple enterprises. Although Winnaleah and the winter grazing of wheats were mainly production and utilisation trials, growers also changed a range of other management aspects such as time of lambing or calving, weight of purchase and sale stock, type of rams and environmental issues such as pugging or pasture cover. Indeed, a number raised that more attention should be placed on the environmental aspects of red meat production and that this emphasis may lead to funding of projects from different sources. Other key issues to consider were climate change, national water policy and animal welfare.

5.5.4 Supply chains and the branding and marketing of Tasmanian red meat

Although supply chain management, branding and marketing of Tasmanian red meat were objectives of RMT, little progress has been made on these issues. A variety of reasons were offered by the review participants for the lack of progress with no one view predominating. Still, these issues continue to surface as priorities, especially the post-farm members of the Program Advisory Committee. Case study producers also raised these as priorities. The industry will need to consider these issues in their planning, especially the lack of progress so far and whether further action is required. Linkage to other supply chain work on the mainland could be considered.

6 Conclusions and Recommendations

6.1 Conclusions

The following conclusions are drawn from the review of RMT.

6.1.1 Program impact

RMT reached about one third of the 1,159 red meat producers in Tasmania with the participation higher for beef producers than sheep producers. If the sheep only producers were eliminated from the sample, the penetration of the remaining red meat producers was about half. A high proportion of participating producers were able to lift their skills and knowledge, undertake adoption of largely existing technology and enhance on-farm performance. Environmental and social impacts were not able to be objectively quantified but subjective assessment indicated benefits were captured in these categories.

The three partners received a reasonable return on their investment with a benefit-cost ratio of 2.8 on their funds. This benefit cost ratio lies within the range of other investment analyses completed in the past few years for R&D programs associated with the red meat industries.

6.1.2 Program management

Tasmania benefited from the collaboration of MLA, DPIWE and TIAR with a streamlined delivery of projects and activities to red meat producers.

The objectives and the core funding criteria should have been more securely negotiated at the commencement of the program to provide management with more certainty. As well, the evaluation plan, although promised, was not produced and this deficiency reduced the effectiveness of the delivery strategy, reporting and this review.

The RMT brand is well recognised and its continued use should be considered in any future program. At the same time, some rationalisation of the wide array of delivery project brands could be considered to minimise confusion among potential clients.

The Program Advisory Committee was effective but there was some confusion about its role and scope. Management and advisory roles requires better definition and documentation before the commencement of any future program.

RMT started with a staffing of seven but this was reduced to two at the end of the program as departing staff were not replaced. A staffing of two is not sustainable if the current RMT delivery structure is to continue in the future.

6.1.3 Future priorities

Although the future direction is a matter for the partners and the Tasmanian red meat industry, the review participants strongly believe that is a great potential for a continued lift in knowledge and skills as well as on-farm productivity and profitability via a similar program to RMT.

Agribusiness groups were involved in the program and were favourably inclined towards RMT, but were not involved as partners or major participants. However, with the rapidly changing landscape in the capacity of delivery to the red meat industries in Tasmania, consideration should be given to strengthening this participation in any proposed new program as this allows use of existing networks and skills.

6.2 Recommendations

6.2.1 Future directions

Meat & Livestock Australia, the Tasmanian Institute of Agricultural Research and the Department of Primary Industries, Parks, Water and Environment should continue to provide a program aimed at increasing on-farm productivity and profitability. The partners should enhance the systems approach utilised in the Winnaleah Towards 2000 to recognise the mixed enterprise nature of most Tasmanian farms and the need to include environmental and social issues in the program. This approach may also increase the potential of attracting new funding partners such as agribusiness and federal agencies.

The partners should continue a mix of projects and delivery methods to provide skills and knowledge to the industry as well as opportunities to encourage productivity and profitability improvements.

The partners should undertaken market research to investigate whether there is a need to refine both the content and delivery mechanisms to reach an increased audience, especially among sheep producers.

6.2.2 Future program management

A new program should be clearly defined with measurable objectives that match the funding available with the National RD&E strategies. The roles and responsibilities of all partners require clear definition along with resource allocation.

As staff members were down to two at the end of RMT, the partners need to negotiate to lift this resourcing level or develop a new model of delivery that more closely fits the resources available. Resources required for the Program should be secured at the outset.

A new program should develop a comprehensive evaluation plan to guide the implementation of the program and show progress against the objectives. This plan should detail its aims, implementation processes, budget and the responsible personnel. As well, more emphasis should be placed on thorough economic analyses of the technologies at an enterprise and total farm basis. Economic analysis on a new technology or system needs to be assessed via a whole farm approach, including additional costs involved, so producers can better assess the value of that change for their particular situation. How environmental and social aspects are to be measured should be clearly defined.

The Program Advisory Committee should be continued to provide industry oversight of on-farm program but the partners need to discuss with industry stakeholders how wider industry issues (particularly post-farm issues such as supply chains and Tasmanian branding and marketing) are dealt with. The roles and responsibilities should be clearly defined, documented and reviewed throughout any new program.

As the brand name of Red Meat Targets is well known and respected by participating red meat producers and agribusiness, the partners should consider the continued use of the brand while reducing the number of project brands to reduce confusion among current and potential clients.

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7 Appendices

7.1 Appendix 1 Red meat producer survey report

7.2 Appendix 2 Summary of case studies

7.3 Appendix 3 Summary of agribusiness interviews

7.4 Appendix 4 Cost benefit analysis report

7.1 Appendix 1 Red meat producer survey report

Survey Report

Red Meats Target Program

Producer Survey

July 2010

REDMEAT TARGETS
Research, development, extension & marketing projects for Tasmania's red meat industry.

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Contents

3 Overview
4 Key messages
5 Grazing Situation
15 Involvement with Extension Activities
22 Enterprise Changes
30 Impact of Changes
45 Final Comments

They said…

We feel that excellent efforts are being made from the various bodies but the reality of costs in implementing best practice and the huge gap between reality on farms and where the decisions are made, make it very difficult all round. Thank you for this overdue survey.

Beef only respondent

I have always been confident in the industry and my ability to make a living from red meat production.

Beef & Sheep respondent

The program is a fantastic starting tool for all sheep/beef enterprises but for farmers to move to next level is very time consuming - for red meat - unless you supply or suggest consultant for farmer to use.

Beef & Sheep respondent

I feel that it has been better focused than some other expensive work and more farmer friendly so more of the effort is getting to the ground.

Beef only respondent

Acknowledgements

This report was written Ben Coutts and Amy Samson, with survey design by Jeff Coutts and Peter Hanrahan. Peter Hanrahan and Associates would like to thank Annette Ireland for her valuable contribution to the survey reporting process. Also to Peter Ball for his assistance in sending out the mail survey and to the producers for taking the time to fill out and return the survey for analysis. This report would not have been possible without them.

Overview

Background

This survey report is part of an external review of the Red Meat Targets Program - a partnership between Meat & Livestock Australia (MLA), Department of Primary Industries, Parks, Water and Environment (DPIPWE) and Tasmanian Institute of Agricultural Research (TIAR).

The purpose of this survey was to obtain Tasmanian producers' feedback on activities associated with the Red Meat Targets (RMT) Program. The aim is to determine the value of the program to Tasmanian producers, to see what is working well for producers in Tasmania and what may need to be changed with future activities.

Methodology

Initially proposed as a telephone survey to collect a representative sample of 100 participants of the RMT program, due to privacy concerns by TIAR this survey ended up being undertaken via mail.

The survey aimed to collect quantitative and qualitative data. MLA and Peter Ball, TIAR, had input to the final version of the survey.

From a database of approximately 400 contacts of producers who have had some involvement in the RMT program, TIAR mailed the survey and a stamped return envelope to every second person on the list to gain some level of randomisation of responses.

200 mail surveys were distributed early-mid June 2010 and were followed up with a reminder letter about one week after the first. From these, 55 surveys were returned by 2 July 2010 for analysis.

Grazing Situation

Producers were reasonably confident that their respective red meat industries have a profitable and secure future in Tasmania. **This confidence has generally remained unchanged or has increased over the last four years.** This is despite producers having been impacted by drought and other weather conditions; low and fluctuating prices; increasing costs of production; as well as pests, wildlife and disease. Extension programs and initiatives together with benchmarking and monitoring practises were positive impacts that helped some producers with better business management and improved grazing and irrigation practices. Good prices and strong demand for lamb and mutton has also impacted positively on producer confidence.

Involvement with Extension Activities

Producers see extension activities as providing a forum for improved understanding and increasing the awareness of new ideas. They believe that there is further potential for extension activities to be even more useful in the red meat industry. As a result of being involved in extension activities, producers (specifically Beef only), mentioned improved understanding of implementing better pasture and grazing practices, better awareness of business management, benchmarking and monitoring, and measuring practices to improve profitability. Some mentioned that they had gained knowledge from visiting other farms in the state and by sharing ideas with others.

A wide variety of information sources including newsletters, newspapers, magazines, television and radio were found to be useful in obtaining information about livestock and pasture management. Others noted included consultants and suppliers as well as field days, trials and seminars. The ability to gather information from a range of different sources seemed to be an important factor for many producers.

Key Messages

Enterprise Changes

Over the last four years, there appears to have been a profitability driven shift in producer thoughts about their farm business and management with more commercial and profit driven approaches. Both 'Beef & sheep' and 'Beef only' producers highlighted changes to grazing systems, as well as pasture management and quality to improve productivity and profitability. 'Beef & sheep' producers particularly looked at making changes to the makeup of their livestock, with some movement away from beef cattle production to sheep, or from wool to lamb. 'Sheep only' producers were specifically concerned with developing drought management strategies. Producers also tended towards a more hands on management style, increasing monitoring, measuring and benchmarking.

A variety of activities and information sources influenced changes made by producers. These included programs (such as Prograze, Toward 2000 and More beef from Pasture.) Field days, information day and farm trials were also mentioned particularly the Winnaleah Field Days and projects. Discussion groups such as the Circular Heads discussion group were also a source of information and shared ideas.

Impact of Changes

As a result of changes made, producers have seen benefits in the environmental, productivity, economic and social areas. For the majority of producers, productivity benefits have been higher in the past fours years then the fours years previous. Drought however, has negatively affected the productivity gains of some producers.

Environmental: Benefits seen include improved and more persistent pasture and increased ground cover; better water quality (less salinity problems), improved pest management, more sustainable systems and increased soil activity.

Productivity: Benefits include increases in stock numbers, sales, carrying capacity and profit per hectare were all mentioned as direct results of management changes. Changes to grazing pasture management have also brought positive results by improving calf/lamb weights and increasing meat quality.

Economic: The benefits of higher productivity (improved stock and pasture management) has direct economic impact including more kilograms of beef per hectare and positive meat sheep sales (with better prices due to lamb shortages and higher prime lamb/mutton prices). Beef producers are concerned that although there may be higher production, there has been lower return with the reduction in beef prices.

Social: Benefits, particularly relating to improved management systems, include: reduced stress, extra time, higher standards of living, recognition, peer industry support and encouragement of good performance. In contrast, a couple of producers felt that the changes required extra time spent on management.

Producers rated the Red Meat Target Program (its extension activities and information sources) as having a moderate (6/10) influence on improving producers' profitability and sustainability. It was noted that the program provided awareness of and access to new ideas and challenges as well as access to balanced and unbiased information. It was noted that it was important to provide extension to proactive producers in order to progress the industry. There was some concern however, that generalised systems may not always work on diverse and different farms.

In the future, producers felt that it was important for existing programs to be continued and expanded and for more support to be provided for R&D and extension activities. Extension services were seen as particularly important as a communication link between research and farmers. The importance of the industry justifying these programs to the state was noted by a number of producers. There was also a call for the expansion of delivery services to a wider area (e.g. King Island) and for further engaging mixed producers.

Grazing Situation

Figure 1: There were 55 respondents to the survey. Of these, 20 indicated they were engaged in both beef and sheep production, while 29 were beef only, and 6 were sheep exclusive.

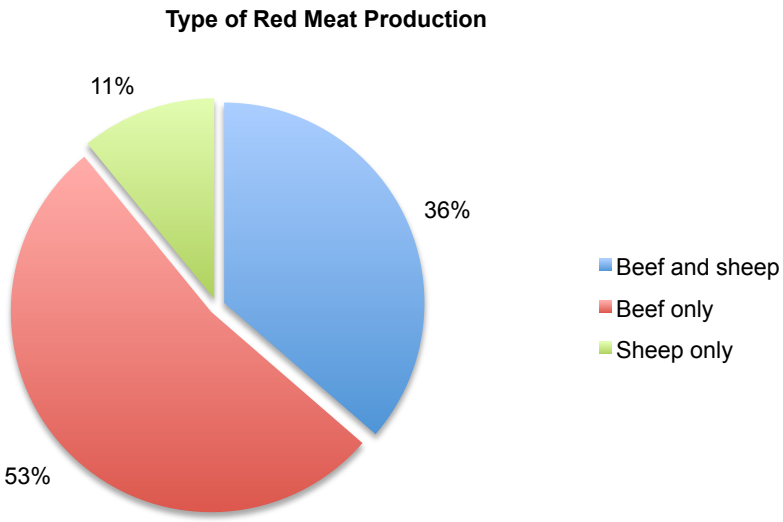


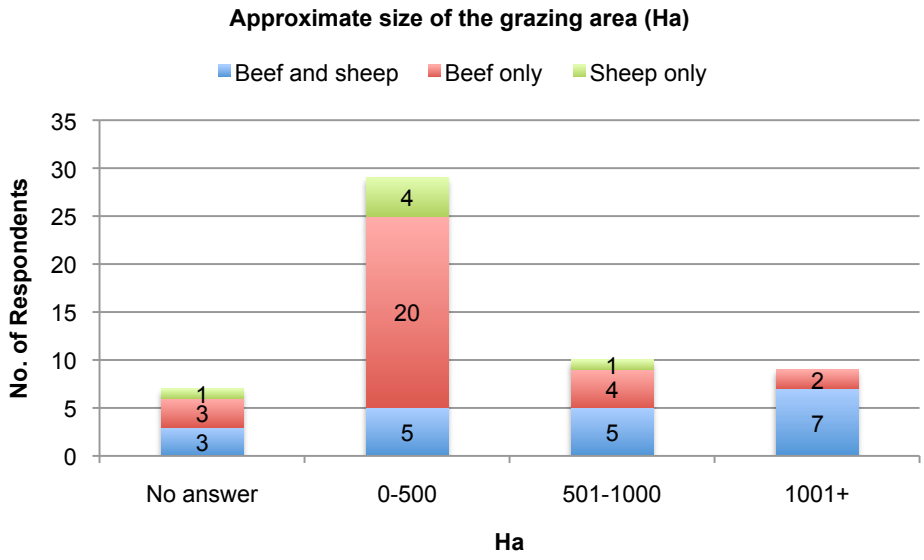
Figure 2: Listed below is a breakdown of respondents postcodes. The top 4 postcodes represent the following regions in order: King Island (6 mentions) , Bridport-Tomahawk (5 mentions) , Calder-Yolla (5 mentions), and Bracknell-Poatina (3 mentions).

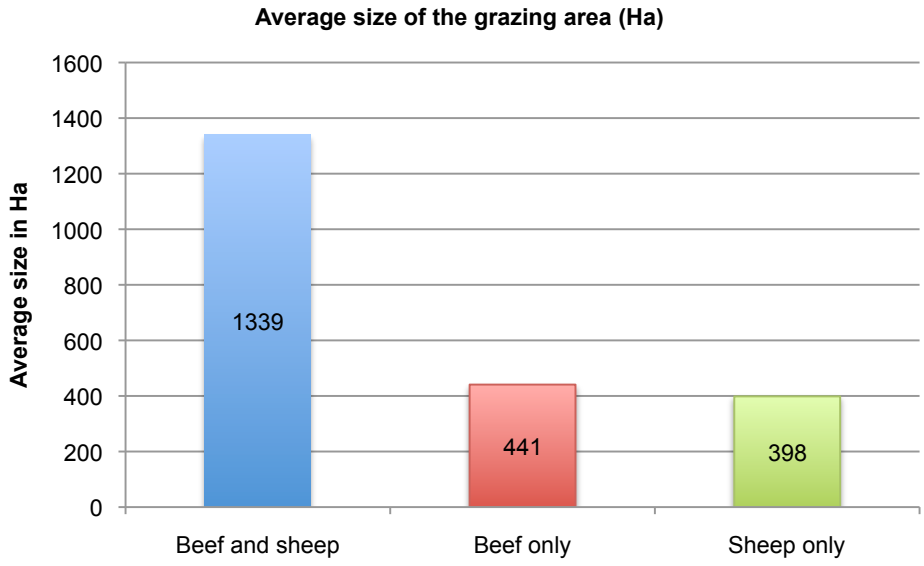
Postcodes	No. of respondents
7256	6
7262	5
7325	5
7302	3
7140	2
7213	2
7265	2
7291	2
7292	2
7301	2
7315	2
7330	2
7120	1
7150	1
7210	1

Postcodes	No. of mentions
7212	1
7216	1
7250	1
7259	1
7263	1
7264	1
7270	1
7276	1
7300	1
7303	1
7304	1
7321	1
7331	1
No answer	4

Grazing Situation

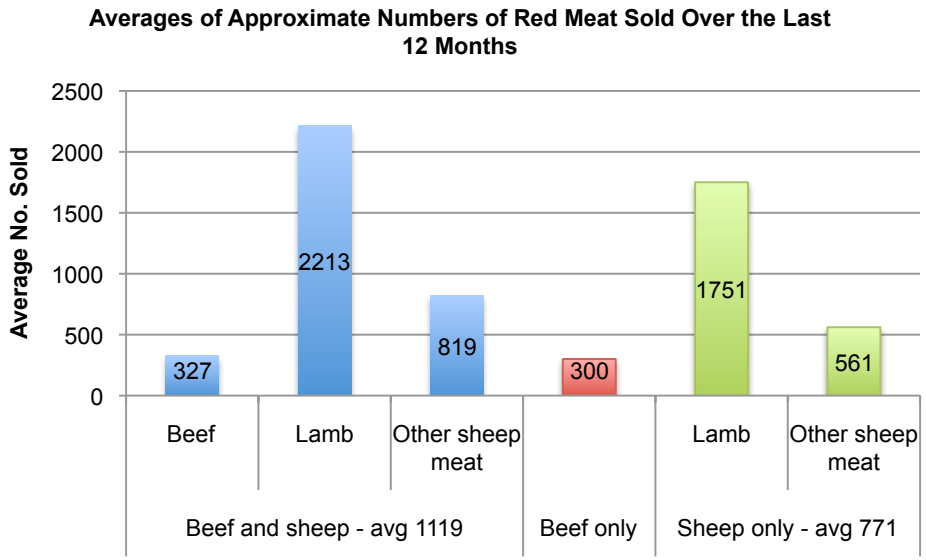
Figure 2 & 3: The charts below show approximate size of the respondents' grazing area. Producers with both beef and sheep had the largest average grazing area (1339 Ha).

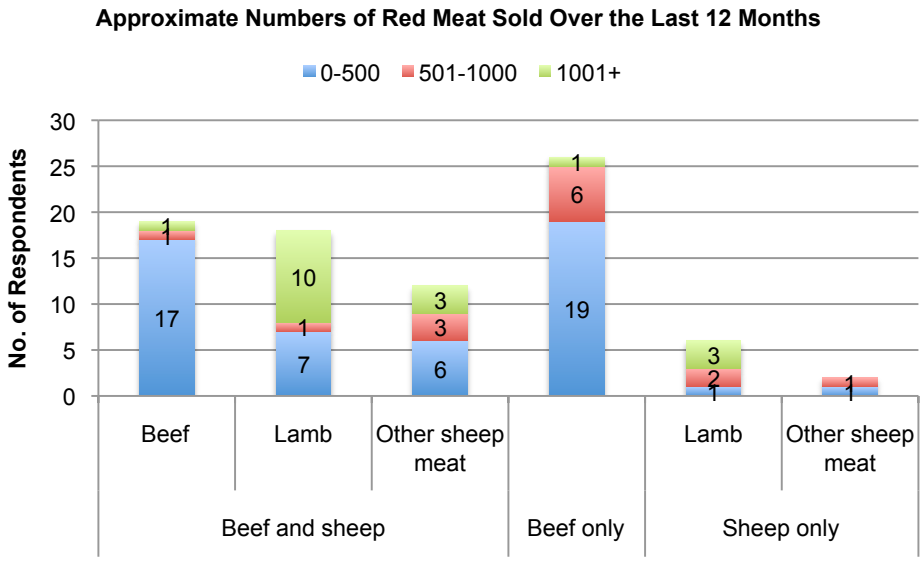




Grazing Situation

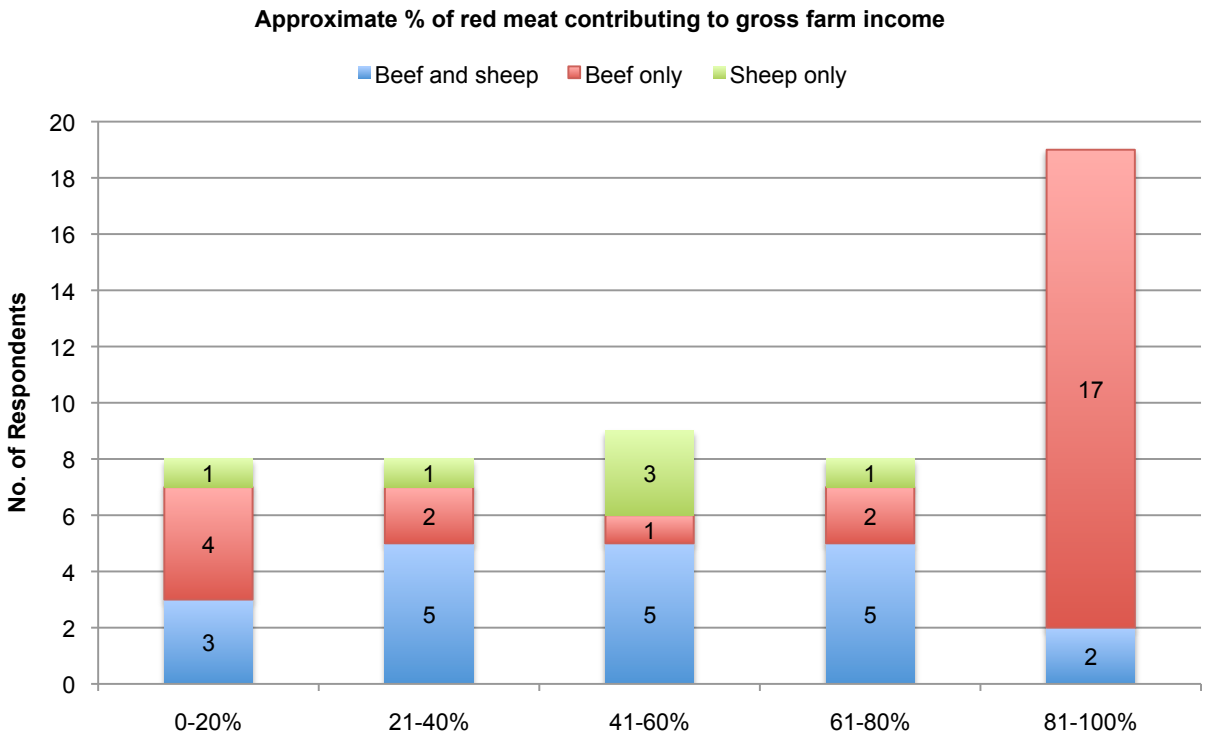
Figure 4 & 5: These column charts show the approximate numbers of red meat sold over the last 12 months. On average, producers sold more lamb than other types of red meat.





Grazing Situation

Figure 6: The percentage of red meat contributing to gross farm income was fairly well dispersed between 0-80% within both Beef and sheep, and Sheep only production groupings . The vast majority of Beef only respondents however, indicated a 81-100% income contribution to gross farm income.



Grazing Situation

Main factors/issues impacting on farming/enterprise
Drought and other weather conditions in some areas such as too much winter rain or frosts have made a significant impact on both the Beef and Sheep industry. (31 mentions) Drought conditions in some areas have resulted in degraded pastures, lack of feed and low fertility and stocking rates.

Low prices (18 mentions) for beef, particularly prime beef or finished cattle and wool have also had a significant impact on some businesses. Increasing costs (17 mentions) for such things as fertilisers, freight and core stock prices have impacted on the cost of production and business profit. Grain and commodity prices have fluctuated and pests, wildlife and some diseases have also had a negative impact for some producers. (8 mentions)

Some positive impacts of extension programs and initiatives were mentioned as resulting in better business management and improved grazing and irrigation practices. (6 mentions) Benchmarking and monitoring practices were also mentioned as having an impact.

A couple of respondents called for further extension work/trials or initiatives to help businesses, one respondent suggesting that *Towards 2000* was aging.

Figure 7:

Main factors/issues impacting farming enterprises over the last few years. Brief Summary – All producers	No. of mentions
Drought & other weather conditions	31
Low and fluctuating prices	18
Increasing costs of production	17
Pests, wildlife, diseases	8
Improved management practices	7

“

Beef & Sheep Producers

Extended dry periods, slow prices for wool and beef vs. cost of production, drought – low pasture production therefore low stocking rates, less turnover.

Higher costs - less profit. This season higher. Calf and store lamb prices we pay when fat cattle prices haven't gone up like lamb prices.

Developing irrigation infrastructure and improving pastures including controlled grazing.

Development centre Pivot Irrigation - 15 Pivots Combining livestock and cropping enterprises i.e. complementing each other drought proofing - diversification

Beef only Producers

Dry years (three in a row) Low wool prices, reduced livestock numbers, damaged pastures due to dry years, insect attack and weed invasion.

Overall decline in real returns of $ per kg beef produced. Increased fertiliser costs. A lack of extension of trials done and how the results can be of benefit to my business.

Drought (either wet or dry) has severely impacted on pasture quality in the past 5 years- 6 years. In addition to this the local/national markets have fluctuated significantly on grain and commodity prices.

Learning better grazing management practises. Bench marking. Tree plantations, wildlife and weeds (MIS schemes)

”

Grazing Situation

Figure 8:

Main factors/issues impacting farming enterprises over the last few years. (Beef & sheep producers)	No. of mentions
Drought has affected pasture growth, stocking rates and production • drought in Southern Tasmania • abnormally dry years, low pasture growth & production • extended dry period • low pasture production, low stocking rates, less turnover • dry years – 3 in a row • damaged pastures • reduced livestock numbers	12
Low beef & wool prices • low prices for wool and beef vs. cost of production • low wool prices • low beef prices • increase in sheep meat value – decline in cattle returns • poor price for quality prime beef – good lamb prices – moved to agisting dairy heifers (300 hd.) • calf & store lamb prices we pay when fat cattle prices haven't gone up like lamb prices	8
Managing general increases in cost of production • Fertilizer costs • water pricing • managing costs of production in relation to farm income • higher costs – less profits	6
Pest and wildlife management • Corbie grub attack to pastures • game management • insect attack and weed invasion • uncontrolled grazing – native animals, rabbits, possums	4
Development of improved irrigation systems and infrastructure & improved grazing systems. • developed centre pivot irrigation – 15 pivots • developed irrigation infrastructure & improving pastures – controlled grazing	2
Diversification for drought proofing • Combining livestock and cropping enterprises – complementing each other – drought proofing	1
Other issues: - benchmarking - lamb production - rebuilding numbers - govt regulations- difficult & expensive to reduce nos. efficiently	1

Grazing Situation

Figures 8 & 9:

Main factors/issues impacting farming enterprises over the last few years. (Beef only producers)	No. of mentions
Effects of Drought and other weather conditions • dry seasons/poor seasons/strange seasons/continual rain • severe lack of rain – lack of feed – effects on herd fertility • drought severely impacted pasture quality past 5 – 6 years • ceased cropping due to lack of profit • drought conditions, lack of feed, degrading pasture, downsizing herd • drought clover disappeared • sales low – backgrounding (agistay) for other people (300hd over 250ha) • trace element deficiencies	13
Increasing costs of production including core fertiliser, freight, fuel, core stock and lower returns on output • price of fertilisers (x 3) • rising input costs (x2) • cost and availability of store stock • cost of production, transport, shipping, fuel (x 2)	9
Low & fluctuating beef & commodity prices • cattle price fluctuations – price uncertainty (x2) • low prices for fat/finished cattle • local/national markets have fluctuated significantly on grain and commodity prices • cost of production cf. price received for product • decline in real returns of $ per kg beef produced	8
Positive impacts of involvement in extension initiatives from groups such as RMT, MLA • improved grazing management and business skills from RMT, MLA and discussion group • initiated trials and farming funded benchmarking (x 2) • learning better grazing management practices • tree plantations • water logging	5
Pests and diseases • wallabies & possums, • grasshoppers, grubs, corbies • pestivirus – loss of production	4
Need for renewed extension initiatives • lack of extension trials done & how the results can be of benefit to my business • Towards 2000 aging	2
Other issues/impacts - govt. land clearing regulations - no certified organic cattle market in Tasmania - staffing issues - water logging - retired but still interested in RMT activities	1

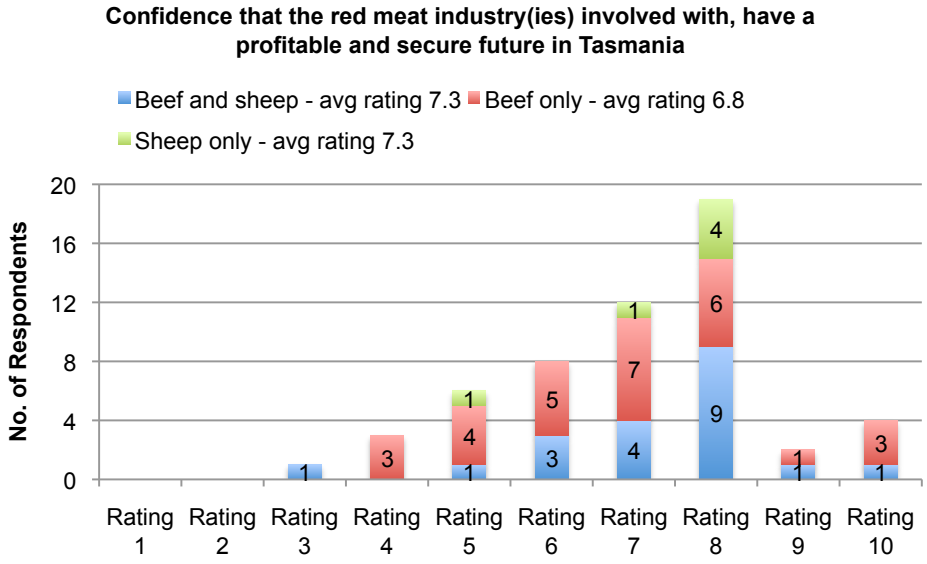
Main factors/issues impacting farming enterprises over the last few years. (Sheep only producers)	No. of mentions
Weather conditions • Frost, drought, poor seasons x 4 • too much rain last winter x 2	6
Costs • high fertiliser costs • high costs generally	2
Having a family	1
Water logging	1

Grazing Situation

Confidence in future of the Tasmanian red meat industry

Figure 10: The majority of respondents in all production groupings had quite a high level of confidence (overall average rating 7) that the red meat industries have a profitable and secure future. There is little difference between the different groups of producers.

In general, respondents commented that the industries were looking good. Concerns mostly related to a rise in input costs and low prices particularly in beef production. (4 comments)



Figures 11, 12 & 13:

Comments on confidence ratings. (Beef & sheep producers)
Concerns: • pricing still an issue • concerned about lack of competition in processing sector
Positive ratings: • would not be in agriculture if saw no future – like what I do & see profitable future • prices will stay up while competition in local markets present lamb prices have remained high during high Aus. $, GFC – nos. remain low

Comments on confidence ratings. (Beef only producers)
Concerns – cost of inputs. • losing confidence that long term decrease in returns can be offset with economically affordable productivity gains • costs rising all the time & no proportionate increases in cattle prices • long term confidence but next 6 – 10 years hard – input costs will outstrip returns.
Positive ratings: • producing for a niche market • very confident in Beef industry – big gains with "MSA" to be had.

Comments on confidence ratings. (Sheep only producers)
Positive rating: • Sheep production looking good but one does not know future.

Grazing Situation

Change in level of confidence in future of Tasmanian red meat industry

Comments by producers in regard to confidence in the red meat industry over the last four years suggest that good prices and good demand for lamb and mutton have sustained the industry and balanced out costs and profits for producers with both sheep and cattle.

One producer commented that lamb prices were *good* and that *mainland competition overrides Coles & Woolworths setting prices*. Another suggested that good prices had assisted *on farm developments*. A couple of respondents mentioned they were confident in a good demand overseas for Australian lamb and mutton and another that there was scope to increase sheep meat consumption in the US. Another was confident in demand for Australian red meat while 'Foot & Mouth' disease was around.

There was some concern however expressed by a few producers from the 'beef & sheep' and 'beef only' groups about the effect on prices of the big retail companies and a couple mentioned the lack of competition in the processing sector. The low price of good quality beef and rising input costs was a concern for the 'beef only' group as was the effect of the high $A on returns.

Overall the 'beef and sheep' and 'sheep only' group seemed happier with the long term future. A couple of respondents mentioned the declining numbers of the national flock. A couple of respondents commented on their involvement in extension activities as giving them confidence in the future of their businesses.

Beef & Sheep Producers

I have always been confident in the Industry and my ability to make a living from red meat production.

For lamb and mutton in particular there has been good demand in the Aust. market and several export markets. Much scope to increase consumption of sheep meats in U.S.

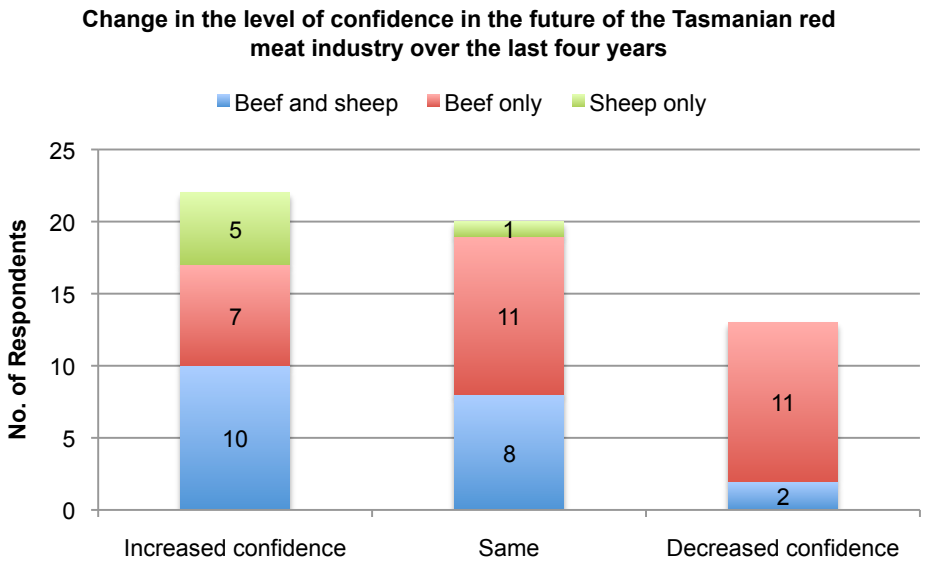
Lamb good - good mainland competition overrides Coles and Woolworths setting prices. Beef very poor - Coles and Woolworths set price - they are main end users - this does not look like changing.

Beef only Producers

Increasing concentration of power in retail and processing industries intent on protecting margins at our expense. High A$ due to mining sectors limiting return on exports driving up labour cost. Last year's fertilizer price spike a warning of what the future holds??

Figure 14: Most respondents indicated that they had either increased or kept the same level of change in confidence in the future of the Tasmanian red meat industry over the last four years.

There was however a decrease in confidence amongst 11 beef only producers and 2 beef and sheep producers. As noted above, this was mostly driven by concern over low prices and rising input costs.



Grazing Situation

Figures 15, 16 & 17:

Comments on changes in confidence in last 4 years. (Beef & Sheep producers)	No. of mentions
Confidence affected by excellent sheep & lamb prices and good demand. • good demand for lamb & mutton in Aust. and several export markets • scope to increase consumption of sheep meats in US. • sheep meat future looks ok. • lamb good and good mainland competition overrides Coles & Woolworths setting prices.	4
Overall confidence in sustainability and long term future of industry • still confident in red meat industry and ability to make a living • while some countries have foot & mouth disease will still be demand for Australian beef • good prices have supported on farm developments • increased wool demand	4
Lamb prices up and beef prices down – overall balanced out profits • lamb prices good – hopefully beef on rise too • cattle down sheep meat up – balanced out	3
Decreasing sheep numbers in Australia • decreasing national flock • low sheep numbers	2
Concerns for industry • over continually rising costs • lack of competition in processing sector.	2
Poor price for beef • Beef price poor - Coles & Woolworths set price – they are main end users	1

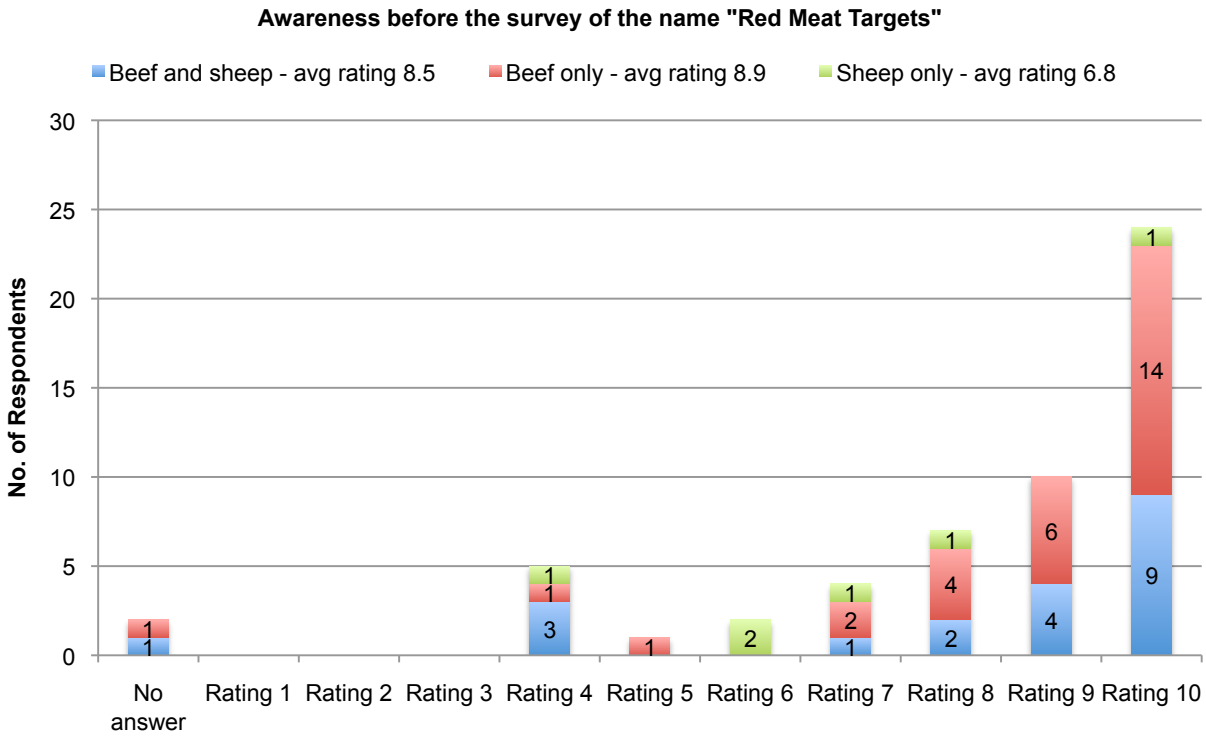
Main factors/issues impacting farming enterprises over the last few years. (Beef only producers)	No. of mentions
Concerns over low price of beef and increasing cost of production • costs up, cattle prices down • excuse of high $A to continue to reduce price paid for high quality beef (more to do with lack of competition and imports to state. • increasing concentration of power in retail and processing industries intent on protecting margins at producer expense • high $A due to mining sectors limiting return on exports – driving up labour costs • low sale price of beef in relation to cost of production • spike in fertilizer price a warning of what future holds	6
Future ok because of involvement in niche market • Galloway Breed	2
Involvement in extension activities and other programs have helped confidence • involvement in Greenhams, MSA, Aleph, & Cape Grim is positive	2
Long term confidence but next few years will see rising costs	1

Main factors/issues impacting farming enterprises over the last few years. (Sheep Only Producers)	No. of mentions
Demand and prices looking good • lower sheep nos. worldwide increasing demand and maintaining higher prices	2

Involvement with Extension Activities

Awareness of Red Meat Targets program

Figure 18: Overall producers (overall avg rating 8.5) had a very high awareness of the name “Red Meat Targets” prior to the survey. Sheep only respondents however, were less aware than the other groups (avg rating 6.8 where n=6).



Involvement with Extension Activities

Figure 19: Overall the majority of respondents rated the extension activities that they had attended or been involved with over the last 4 years as moderately useful (overall average ratings ranging from 4.7-6.8). The highest rated extension activity was 'Field days at other RMT R&D sites' (average rating 6.8), while the lowest was 'Making More from Sheep activities' (average rating 4.7).

'PROGRAZE and PROGRAZE Update course' and 'Winnaleah towards 2000 demonstration site' both received the highest attendance (42 respondents each) while 'Other' activities (14 respondents) and 'Making More from Sheep activities' were the least attended (27 respondents).

Other extension activities/programs involved in:

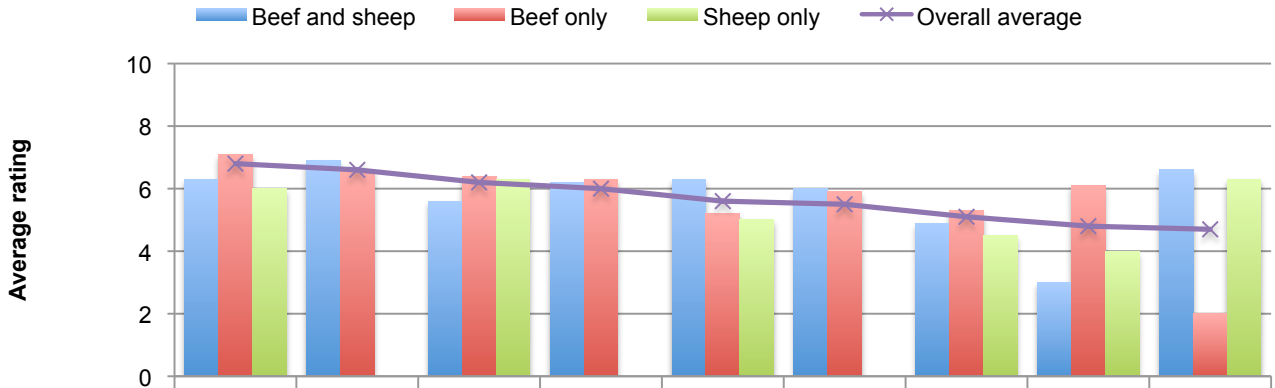
Beef & Sheep group

- Impact Benchmarking through Holmes & Sackett
- Holmes Sackett King Island Group

Beef only group

- Circular Head beef discussion group. *Only 3 on farm visits done but very useful information on pasture management and marketing ideas.*
- Red Sky information day.
- Farmers discussion group – Derwent Valley (HORC) – facilitated by Derwent Catchment NRM
- Keyline Farming, Farming Bio-Dynamically Carbon Sequestration, Managing Soil Food Web, building humus levels
- MLA Pilot Project Pasture Management

Red Meat Targets extension activities involved in or attended over the last 4 years



	Field days at other RMT R&D sites	More Beef from Pastures regional activities and Expo's	PROGRAZE and PROGRAZE Update courses	Winnaleah towards 2000 demonstration site	Meat Profit Days	Other	Better Fertiliser Decisions courses	Red Meat Target Financial benchmarking	Making More from Sheep activities
Beef and sheep	6.3	6.9	5.6	6.2	6.3	6	4.9	3	6.6
Beef only	7.1	6.6	6.4	6.3	5.2	5.9	5.3	6.1	2
Sheep only	6	0	6.3	0	5	0	4.5	4	6.3
Overall average	6.8	6.6	6.2	6	5.6	5.5	5.1	4.8	4.7

No. of Respondents that provided ratings (n) *NB: numbers below correspond with the table of figures above*									
Beef and sheep	10	17	13	11	13	3	11	11	12
Beef only	21	24	25	20	19	10	17	18	11
Sheep only	3	1	4	1	3	1	2	2	4
Total	34	42	42	32	35	14	30	31	27

Involvement with Extension Activities

Main ideas/new information gained
The majority of respondents particularly from the 'Beef only' group, mentioned improved understanding and implementation of better pasture and grazing practices, such as rotational/cell grazing, grazing to achieve maximum output, information on grass varieties, identifying pasture, species selection & fertilizers. ('Beef & Sheep' group – 5 mentions. 'Beef only' – 16 mentions)

The 'beef only' producers mentioned a better awareness of business management, analysing their own businesses, benchmarking and monitoring and measuring practices to improve profitability. (9 mentions)

The 'Beef & Sheep' group commented that attendance at events had made them more aware of innovations and innovative practices generally and that they had gained knowledge from visiting other farms in the state or just sharing ideas with other producers. (6 mentions)

A couple of respondents mentioned gaining knowledge in the area of nutrition and herd health.

A couple of 'sheep only' producers mentioned ideas on improved flock management, including early weaning, shorter mating times, scanning, benchmarking and gaining up to date ideas for best practice in the industry.

Beef & Sheep Producers

Benchmarking Business Performance highlighting strengths and weaknesses in my business.

Better understanding of pasture management and potential live weight production per ha.

Progressive and sustainable grazing management - has credibility when delivered by graziers.

Grass varieties, Block grazing, Looking at farms across the state, and understanding their farming practices.

Beef only Producers

Better management of pasture. Some insight into our costs relating to industry.

Fine tuning of skills. Made me really concentrate on thinking and analysing the profit drivers of my business.

Importance of analysing every aspect of my business so as to remain profitable. Correct grazing techniques to maximise pasture intake Continual monitoring of stock via faecal, blood tests.

Figure 20:

Main ideas/new information gained from attending nominated events. (Beef & Sheep producers)	No. of mentions
Awareness of new ideas, sustainable management practices & ideas on increasing production • increased awareness of innovations in industry • looking at farms across state and understanding management practices • benefits of talking and sharing ideas with other producers • awareness of ideas on how to increase production x 2 • awareness of progressive and sustainable management practices	6
Ideas on improved pasture management • information on grass varieties, identifying pasture, species selection & fertilizers x 2 • information of block grassing • better understanding of pasture management and potential live weight production per hectare x 2	5
Benchmarking Business Performance • highlighting strengths and weaknesses • understanding of importance of qualitative measurement	2
Reinforcement of existing ideas and principles	1
Greater understanding of my sheep vs. cattle enterprises	1

Involvement with Extension Activities

Figures 21 & 22:

Main ideas/new information gained from attending nominated events. (Beef only producers)	No. of mentions
Improved pasture management and grazing practices • pasture identification and improvement • understanding of new and established pasture species suitable for our conditions. • rotational grazing, maximising pasture x 4 • block grazing, smaller paddocks • grazing method, pasture establishment • grazing techniques to maximise pasture intake • cell grazing, pasture improvements, optimum feed potential of grasses – how to graze to achieve maximum output • More beef from pastures at Delorhine – gained considerable up to date info. on improved pastures/grasses and rotation of feeding off. • Winnaleah Towards 2000 – pasture rotation, pasture trials	16
Better understanding of business management and monitoring & measurement practices • better thinking through and analysing the profit drivers of my business • monitoring weight gain and growth rate of cattle • analysing every aspect of business to remain profitable. • continual monitoring of stock via faecal, blood tests. • some insight into costs relating to industry • kg/beef/ha, trying to increase this • Business benchmarking • monitoring weight gain and growth rate of cattle	9
Nutrition & herd health • use of seaweed extracts to help reduce costs	2
Improving soil structure	1
Better understanding of sustainable practices • carbon sequestration, feeding soil food web, understanding farming biologically, organically, bio-dynamically, tree planting	1
Overall good discussion but time restraints	1

Main ideas/new information gained from attending nominated events. (Sheep only producers)	No. of mentions
Improved flock management • early weaning, shorter mating, scanning.	1
Benchmarking • best practice – good to update ideas	1
Updated information	1

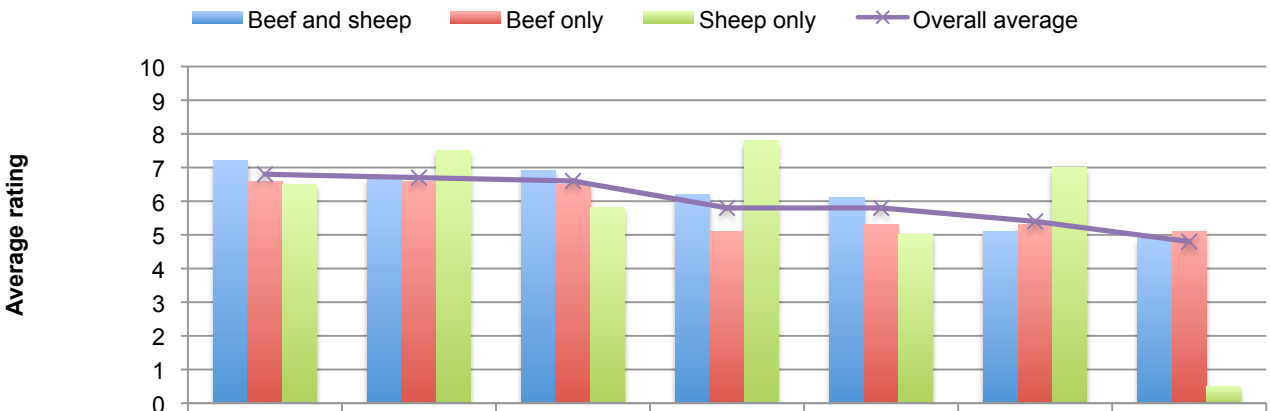
Involvement with Extension Activities

Useful sources of information

Figure 23: 'Newsletters' and 'Newspaper and magazine articles' were rated by respondents as the most useful sources to obtain information about livestock and pasture management (average overall rating 6.8 and 6.7). The least useful to respondents were 'Websites' and 'Agricultural supply companies' (average overall rating 4.8 and 5.4).

For the most part respondents from the 3 different producers groups gave similar average ratings. The 'Sheep only' producer group had some slight differences, rating both 'Consultants' and 'Agricultural supply companies' higher, and 'Websites' lower.

Information sources used to obtain information about livestock and pasture management



	Newsletters	Newspaper and magazine articles	TIAR/ DPIPWE	Consultants	Other	Agricultural supply companies	Websites
Beef and sheep	7.2	6.7	6.9	6.2	6.1	5.1	4.9
Beef only	6.6	6.6	6.5	5.1	5.3	5.3	5.1
Sheep only	6.5	7.5	5.8	7.8	5	7	0.5
Overall average	6.8	6.7	6.6	5.8	5.8	5.4	4.8

No. of Respondents that provided ratings (n)							
Beef and sheep	19	20	17	17	17	18	16
Beef only	25	24	24	22	23	22	18
Sheep only	6	4	5	5	5	5	2
Total	50	48	46	44	45	45	36

Involvement with Extension Activities

Useful sources of information

Figure 24: Consultants and supply companies were seen by the Beef & Sheep group as a useful source of information relevant to their particular situations. (6 mentions) As one respondent noted the consultants see *a wide spectrum of producers* and are able to *see what works and what is profitable.* Another commented that consultants *keep up to date* with new developments.

Another source of useful information for this group were field days, farm tours and trials. (5 mentions)

Printed material was mentioned by 4 respondents, while 3 mentioned discussion groups or one to one sharing with other farmers as being useful.

One mentioned that feedback from buyers of livestock had been useful.

Beef & Sheep Producers

Nutritionists. Consultants and AG suppliers have great portfolio of info - collected by dealing with a wide spectrum of producers - they get to see what works and what is profitable.

A wide variety of sources keeps subject matter in front of you most of the time. Variety helps.

Beef only Producers

I find that using Bull sale information provides useful information to improve red meat production.

TIAR/DPIPWE - Extension officers and Publications incl. Soils Alive, Managing Tas, Native Pastures, Wallaby Proof Fencing, etc. Prograze and field days - thinking about change to ensure enterprise is sustainable - planning to leave property in better condition than when arrived.

I need independent sources that I know are not biased and also I want to see results of trials that have been extensively analysed and that these results are relevant to pasture based beef production.

Sources of information most useful in making improvements. (Beef & Sheep producers)	No. of mentions
Consultants & suppliers have been a useful source of expert advice and information • consultants & supply companies give good info & advice about producing more grass to launch off lamb and beef • can relate things to your particular needs • Holmes & Sackett • keep up to date with most developments • have great portfolio of information collected by dealing with a wide spectrum of producers – see what works & what is profitable • nutritionists helpful	6
Field days, trials, farm tours etc. a good source of information • trials on own farm, real on ground trial results useful • Field days • Winnaleah Towards 200 trial very motivating • Farm tours on similar type of properties to the Home property where achievements have been made to pasture etc.	5
Reading articles, newsletters, papers and magazine articles.	4
Discussion groups, one on one sharing a useful source of information • good for looking at change • good to access/share information with other farmers • Feedback from buyers of our livestock	3
Web – can find what I need for farm	1
Variety of sources – actively seek information	1
Grazing tools and information	1

Involvement with Extension Activities

Figure 25: For the 'beef only' producer group Field days, farm trials and workshops were seen as a good source of information. (8 mentions) One respondent mentioned the importance of field trials where results were carefully analysed. A variety of publications, magazines and industry newsletters as well as television programs provided information and 'real life stories' about innovative practices. (5 mentions). 4 respondents noted that they received information from a variety of sources.

Another mentioned the importance of receiving information from 'independent' sources. Membership of organisations or programs such as TIAR and DPIPWE was another source of helpful information as were various discussion groups. Consultants were mentioned as a good source of information by two respondents. Another respondent found Bull Sale information useful and another mentioned the role of extension officers.

Sources of information most useful in making improvements. (Beef only producers)	No. of mentions
Trials, field days, seminars are useful sources of information • More Beef from Pasture Days • like to see results of trials – extensively analysed with results relevant to pasture based beef production • PROGraze and field days • Field days most useful by far • Winnaleah – outstanding on ground demos • Red Meat Targets workshops useful in increasing farm productivity • Workshops on organic farming, bio-dynamics, biological farming etc.	8
Magazines and publications & media useful sources of information • MLA, BPIPWE, Soils Alive, Managing Tasmanian Native Pastures, Wallaby Proof Fencing, • Industry newsletters, reinforce & remind of ideas & principles • Landline ABC TV, Newspaper articles – real life stories	5
Variety – mosaic of sources most useful • source ideas on pasture management and weed control which impacts on quality of meat • consider information from a variety of trials, products and sharing of experiences to make good decisions on pasture, herd improvement etc.	4
Gain information through organisations and programs • TIAR/DPIPWE – programs most beneficial to our operations x 2 • membership of Grasslands society and Beef Promotion Groups	3
Discussion groups • Waterhouse & Winnaleah Discussion Groups • most valuable education discussion groups headed by Basil Doonan	2
Consultants • have taken long time to research best practices	2
- Bull sale information – useful information to improve red meat production - Extension officers - Need for independent sources - Thinking about change to ensure enterprise is sustainable – planning to leave property in better condition than when I arrived. - Haven't received any newsletters yet - Rely on self - Information on Organic farming	1

Sources of information – Sheep only

Figures 26: The 'sheep only' producer group mentioned the ABC and local newspapers as providing useful information about events and providing livestock reports. One mentioned gaining information from talking with other farmers and another that he worked at keeping abreast of new information and ideas.

Sources of information most useful in making improvements. (Sheep only producers)	No. of mentions
ABC a good source of information • promotion of field days etc. • country radio reports	2
Local newspapers • Livestock reports	1
Talking with other farmers	1
Just keeping abreast of new information and ideas.	1

Enterprise Changes

Main shift(s) in thinking about farm business and management

Figure 27: A number (6) of the 'Beef and Sheep' group mentioned changes in attitude in the way their businesses were run, with one commenting he was now running his farm *in a more commercial manner.* Another mentioned that his business was now *more profit driven* and another that they were now *benchmarking* and *changing poor performing operations.*

Others (6) mentioned making changes to the makeup or focus of their livestock operations, with some movement away from beef cattle production to sheep, or a couple from wool to lamb. One however mentioned that the cattle side of their business was not returning enough so they were looking to their sheep but mainly wool sheep.

Some (4) mentioned a greater emphasis on improving pasture management and grazing systems to improve productivity and profitability. A few were looking at ways to improve water efficiency and soil health. One respondent was decreasing his use of cereals and commented that he was less willing to rely on contracting company assertions.

Beef & Sheep Producers

Control the things I can control and not get carried away with Bid industry issues. My Business success or failure is down to me and my ability to manage my business.

Unless it makes a profit don't do it. Benchmark and change the poor performing operations.

The cattle side of the business is not returning enough versus sheep which are mainly wool sheep.

Beef only Producers

It is an intensive, complex business that requires constant analysis and review.

To concentrate on improving what land we have, opposed to purchasing more. Better pasture rotation.

Improve pasture quality and supply a higher quality/value beef carcase.

Be observant, obtain as much information as you can and see how it may be applied to your farm, use those systems you find suitable.

Main shift(s) in thinking about farm business and its management over period. (Beef & Sheep producers)	No. of mentions
Working to improve business management practice and profitability • approaching in a more commercial manner • just need water & good management with attention to detail • aim to control things I can control – emphasis on business management • more profit driven – benchmarking & changing poor performing operations • now understand there is room for very real increases in production • need to get a move on while the regulations and henchmen allow or don't know	6
Making changes to livestock • cattle side of business not returning enough vs. sheep (mainly wool sheep) • moving from Beef to prime lamb • after wet winter last year moved to sheep • Wool to lamb – focus on sheep enterprise increasing key production • increased importance of meat. • increased livestock production/ha	6
Working to improve pasture management and grazing systems to improve productivity and profitability. • keep improving pasture (marketing $ per hectare) • more intense grazing systems. Combining cropping & grazing (fattening) • more efficient use of fertilizer and water • better grazing management	4
Improved water efficiency and soil & fertiliser management • moving to more irrigation • more efficient use of fertilizer and water • moving to minimal till • altered fertiliser timing and mixtures	4
Decreased use of cereals. More cautious about taking on new crops – less willing to rely on contracting company assertions.	1

Enterprise Changes

Figure 28: Most comments from the 'Beef only' producers referred to changes made to grazing systems and improvements to pasture management and quality. (10 mentions) A number of respondents were looking to find the most effective rotational grazing systems and ways of maximizing meat production. 6 mentioned improving business management practices, analysing and reviewing current practices and remaining aware of new ideas and best practice.

A few (3) mentioned ways in which they were looking to improve land and soil health while a couple (2) mentioned changes to makeup of their herds with one moving to more pure red meat production and both stocking for increased production. One mentioned the problem of coping with Government land clearing legislation and another suggested that if prices did not improve they would be out of the business in 5 years. One respondent noted a greater emphasis on sustainability.

Main shift(s) in thinking about farm business and its management over period. (Beef only producers)	No. of mentions
Changes to grazing systems and pasture management & quality • change to 48 hr rotational grazing /increase in nos. run/ha • understanding of importance of pasture quality and supplying higher quality/value beef carcasses • moving to 3 day grazing regime • making more silage/Hay and running higher stocking rates • better pasture rotation & pasture management & production x 3 • improving pasture species after cropping • better grass management, growing more grass • understanding of concept of not eating first leaf as it emerges	10
Improved business management and analysis • learning & understanding business side – more quality time in office • understanding farming enterprise as an intensive complex business that requires constant analysis & review • learning the importance of being observant, aware of new information and its application to farm • intending to increase business profits by using better genetic and pasture • started as hobby but farm now needs to pay own way.	6
Emphasis on improving land and soil health • judicious use of nitrogen fertiliser • focusing more on soil • improving land rather than purchasing more	3
Changes to livestock • move to pure red meat production – more focus on stocking for production • running more cattle, more kg. beef	2
Addressing issues of aging management and reducing farm responsibilities	2
Coping with Government regulation • forced to stop land clearing	1
- Will be out in 5 years if price doesn't pick up - using the KISS principle - emphasis on sustainability	1

Figure 29: Respondents from the 'sheep only' group were concerned with drought management and improving business management.

Main shift(s) in thinking about farm business and its management over period. (Sheep only producers)	No. of mentions
Developing drought management strategies • drought proofing farm • no overstocking – less returns but coping better with drought • put in irrigation system	3
Improved business management • better business management • KISS – aim for simplicity and ease of management of enterprises	2

Enterprise Changes

Changes made to pastures species and/or pasture management

Figure 29: 5 respondents from the 'beef only' group mentioned moving to improved grazing practices such as rotational grazing , resting paddocks and working to ensure survival of perennial pastures. Another mentioned reducing grazing in wet conditions.

Others were moving to different species of pasture such as Phalaris, Fescue and Lucerne to suit environmental conditions. (3 mentions)

2 respondents were looking to use more high performance pasture species while another mentioned using more short term grasses such as white clover which seemed to be winter active.

One respondent mentioned diversifying pasture species used.

Changes made to pasture species and/or pasture management over recent years. (Beef & Sheep producers)	No. of mentions
Better management of pasture & improved grazing practices • rest/rotation • tightened rotational grazing. Measuring DM of pastures • reduce grazing in wet conditions or use lighter animals • ensure survival of perennial pastures by smart grazing • grazing management & pasture management	5
Improved species selection to suit local environment and climate conditions • more Phalaris – it can withstand drought and grub attack • moving away from Ryegrass and towards Fescue & Lucerne	3
Using more high performance/high quality pastures species • pasture upgrading program including addition of species like chicory & plantain • look for high quality grass with high potential growth	2
Using more short term grasses • white clover seems to be winter active	1
Diversifying • using more diverse pasture species	1
Renovation as part of a cropping program	1
Making silage at early stages for better quality and more regrowth	1
Phase 1 of development – trialling to see what goes	1

Enterprise Changes

Figure 30: Most changes mentioned by the 'beef only' producers involved improved grazing systems and improved pasture management. Rotational grazing systems, subdivision of paddocks and more management and maintenance of pastures were examples of changes made. (11 mentions) 5 respondents mentioned changes to pasture species to better suit environmental and climate conditions or production objectives.

A couple (2) mentioned using high quality pastures or finishing crops in selected paddocks and others (2) mentioned diversifying pastures to prevent the need to drench animals or to ensure correct nutrient uptakes. 2 respondents mentioned working to improve soil health and a couple mentioned using the 'dairy approach' to management.

Changes made to pasture species and/or pasture management over recent years. (Beef only producers)	No. of mentions
Improved grazing systems and pasture management • longer paddock rotation/smaller paddocks • better rotational grazing • smaller paddocks and shelter belt plantings • grazing by leaf emergence • intensive rotation • move from set stocking to time control • subdivision for 8 – 12 per k rotation • strict 3 day on with long rest periods allowing plants to reach 3 leaf stage • trying to maintain current pastures as resowing very expensive • pasture rejuvenation and where possible no irrigation • upgraded species in selected paddocks	11
Improved selection of pasture species to suit conditions and production objectives. • include Cocksfoot to combat climate change • introduced tetraploid, ryegrasses and red clover • more use of fescue and Spanish cocksfoot in dry drought prone areas • using more perennial pasture • using more lucerne • sown new pasture with lucerne • trialling EXCELTRAS	5
Increasing diversity in pastures • prevents need to drench animals • ensures correct nutrient uptakes	2
Improving soil health • mulch more and or graze to push some leaves to ground to compost surface • dung beetles	2
Use high quality pasture/finishing crops in selected paddocks.	2
- Little change in pasture species but tried to use dairy approach to managing - No change as came from dairy farm background 4 years ago	1

Figure 31: Comments from the 'Sheep only' producers centred on improving the management and quality of pastures for various uses. A few (3) mentioned choosing particular pasture species such as lucerne or grain crops for weaners and fattening lambs.

Changes made to pasture species and/or pasture management over recent years. (Sheep only producers)	No. of mentions
Improved grazing, pasture management • Rotational grazing • nurture old pastures • Changed to more productive short term ryegrasses • use Pro Gibb & liquid nitrogen • Forage crops • Fodder crops	6
Using pastures/grain for lamb fattening • using lucerne for fattening • using rape, dual purpose grain crops, grown for lamb fattening & 25 ha lucerne • sowing lucerne, chickory for weaners	3

Enterprise Changes

Changes to livestock management

Figure 32: Respondents from the Beef and Sheep group mentioned changes to the livestock they carried to better cope with drought and market conditions. (4 mentions)

A couple (2) mentioned a move from wool to lamb and another was moving from merinos to more crossbred ewes. Another respondent however mentioned moving to a less sheep and more cattle balance. 4 of these respondents mentioned improved grazing practices such as rotational, strip or cell grazing.

A couple of respondents mentioned lowering stock numbers while 2 others mentioned working to get the pasture sustainability and stock numbers balanced.

One respondent mentioned he was working for a faster turnover of stock and another that he was now handling and weighing stock more,

Changes made to livestock management over recent years. (Beef & Sheep producers)	No. of mentions
Changes to makeup of livestock carried • moving from wool to lamb x 2 – (set clear production goals and plan for success) • less sheep – more cattle balance • more crossbred ewes, less merino	4
Improved grazing practices • cattle and lamb grazing – not on grazing area longer than 1 week • better block grazing • more strip grazing • cell grazing	4
Lowering stock numbers • due to worst drought in history • reducing cattle numbers	2
Balancing livestock numbers and pasture utilisation and sustainability • selling more stock as stores to better balance livestock numbers and pasture availability • better management to true weight gain for pasture utilisation	2
Faster turnover • trying to sell at lighter weights and turn more cattle over	1
More handling and monitoring • more handling, more weighing - in weight groups	1

Enterprise Changes

Figure 33: Respondents in the 'beef only' group mentioned a number of changes to the makeup of herds and livestock carried with the aim of increasing production, turnover rates or profitability (9 mentions). A couple (2) mentioned increasing numbers run, larger mobs and earlier weaning and another mentioned using big mobs to get *greater grazing pressure.*

There seemed to be some move away from maintaining herds to earlier selling and faster turnovers.

There was also some mention (5 respondents) of changing grazing practices to more controlled systems with cell/intensive grazing in place and more management, weighing and handling of stock. 2 respondents mentioned using AI programs to improve the quality of their herds.

Changes made to livestock management over recent years. (Beef only producers)	No. of mentions
Changes to livestock carried to increase production, turnover rate and profitability • increase in numbers run – larger mobs – earlier weaning (x2) • use big mobs to get greater grazing pressure • introduction of some cross breeds • sold all cows buying stores • changed from cows and calves into just yearling cattle • gave up wool and moved to selling steers • sale of yearlings rather than ox • destocking earlier rather than later	9
Changes to grazing practices and pasture management • shorter grazing periods/drought lotting • intensive grazing 3 – 4 day movements, group wt. bands, selective on breed lines • cell grazing – grazing at 3 leaf stage • 3 day grazing then move • more management and handling of stock – managing entry weights, weigh regularly to rectify any problems	5
Improving quality of herd • improving cow herd by extensive AI programs (X 2)	2
Doing agistay/backgrounding for other people	1
- Reduced weight loss during Autumn - Drench management to create worm free pasture/increased pasture area - installing adequate watering systems.	1

Figure 34: One 'sheep only' producer mentioned changing the structure of his herd from 2000 merino sheep to 450 crossbred ewes with a plan to increase that number to 6 – 700. One noted a shorter time to weaning and another a shorter mating time of 5 – 6 weeks. One producer commented thattThey had ceased mulesing.

Changes made to livestock management over recent years. (Sheep only producers)	No. of mentions
- shorter time to weaning 10 – 12 weeks - shorter mating 5 – 6 weeks - ceased mulesing - gone from 2000 merino sheep to 450 cross bred ewes. Plan to have 600 – 700 crossbred ewes.	1

Enterprise Changes

Other changes made
Comments from all groups were varied however there seems to be a suggestion that respondents were moving to a more intensive management style in regard to their stock and business generally. Respondents were 'controlling costs', 'looking for optimum benefits', 'monitoring', 'scanning', 'weighing' and 'benchmarking'.

Figures 35, 36 & 37:

Other changes made over recent years. (Beef & Sheep producers)	No. of mentions
- Cropping - better monitoring – purchased a N.I.L.s. panel reader in order to better record livestock performance - use Tetraploid animals for Ims. Wheat (for grazing only) Use mainly Diploid animals for cattle	1

Other changes made over recent years. (Beef only producers)	No. of mentions
More hands on management style & increased monitoring and measuring • manage farm to maintain optimum benefits in looking after stock. pastures and bank manager • feed budgeting & measuring grass as kg Dm/Ha • carefully control all costs • moderating the frame score of breeding animals • increase in labour • have been block grazing now for 2 years. It works why change? hard to hold 31 leaf • feeding stock more consistent, higher quality pasture	7
- some stock agisted rather than purchased - buy fattening cattle that are well bred - increased use of nitrogen - fencing dams and creek. Relieveating water. Feral fencing boundaries as money permits. - wife had to work off farm full time – I have to work part time off farm	1

Other changes made over recent years. (Sheep only producers)	No. of mentions
- scanning all ewes - pushing lambs to higher weights 22 kg & D.W. - Benchmarking - sold all cattle – poor long term returns	1

Enterprise Changes

Specific triggers of change
Respondents indicated ideas and information sparking change or improvements had come from a variety of sources including Programs such as Prograze, Toward 2000 and More beef from Pasture.

Field days, information day and farm trials were also mentioned particularly the Winnaleah Field Days and projects.

Discussion groups such as the Circular Heads discussion group was also a source of information and shared ideas.

Talking with others in the industry was mentioned as important by a couple of respondents.

One producer had gained useful information by involvement in conservation or sustainability groups and another mentioned sourcing information from magazines and media.

Figures 38 & 39:

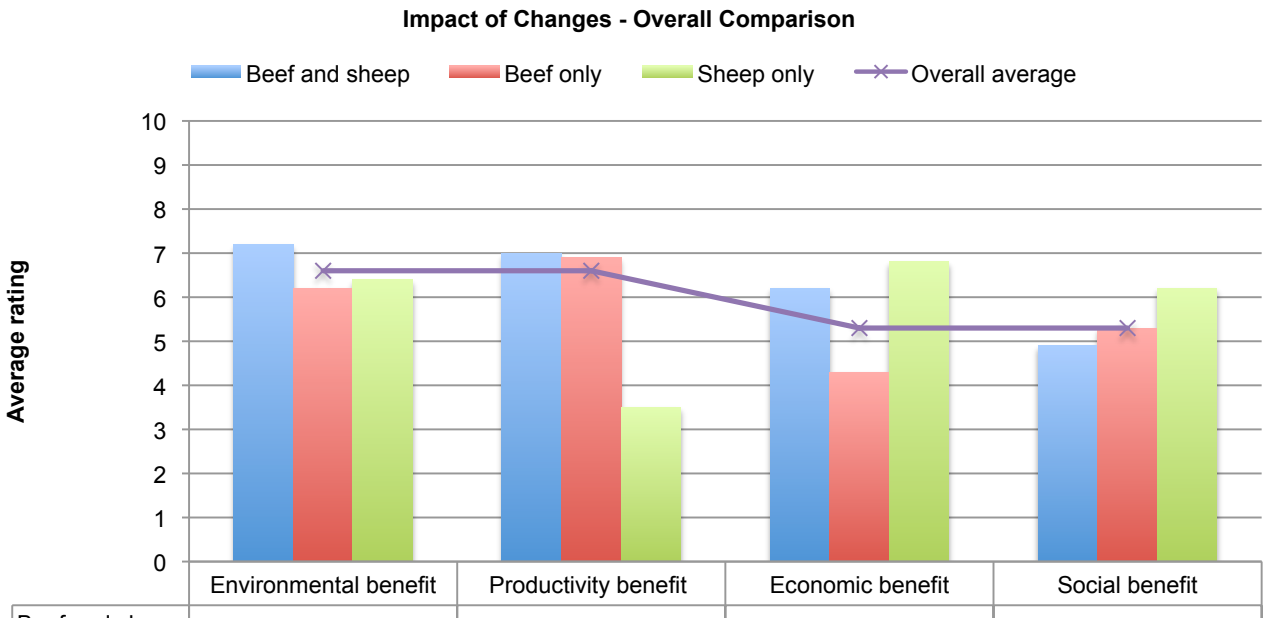
Specific information, extension activities or other avenues of information which particularly triggered and/or supported these changes. (Beef & Sheep producers)	No. of mentions
Field days, farm visits, workshops & projects • Winnaleah Field Days • Winnaleah project • Grasslands field trips	5
Talking with others in industry • developed a plan for best results from my land asset • talking to farmers who have highest Net $ return/ha	3
- Involvement with Cattle (Angus) organisation - Ag. reps, seed reps - Gained realisation no money in being a merino wool grower	1

Specific information, extension activities or other avenues of information which particularly triggered and/or supported these changes. (Beef only producers)	No. of mentions
Involvement with programs & associated activities and courses • Prograze – pasture selection & management • Toward 2000 • Winnaleah trial backed by the Basil Poonan pasture course • Winnaleah pasture program – use of nitrogen & irrigation • benchmarking program • More Beef from Pasture • Speaker from King Island at Deloraine MLA – supported our ideas re native grasses cf. cultivation & new varieties and associated costs • MLA – More beef from Pasture day – Deloraine – became grass farmer not beef.	8
Discussion groups • Circular Head beef discussion group x 3 - in regards managing herd nos. in difficult season - began 1979 – has facilitated most improvements • NRM facilitating discussion group • Winnaleah discussion group	5
- Involvement in conservation/sustainability groups - information from magazines, media re global warming etc.	1

Impact of Changes

Figure 40: As a result of changes made, respondents thought that there had been a moderate impact on their environmental and productivity areas (average overall ratings 6.6 respectively) and a slightly lower impact on the economic and social areas (average overall ratings 5.3 respectively).

There were a few variations between the producer groups. The 'Sheep only' produces, rated a lower impact on productivity than the other groups, with an average rating of 3.5. The 'Beef only' producer group rated the 'Economic benefit' impact comparatively lower with an average rating of 4.3.



	Environmental benefit	Productivity benefit	Economic benefit	Social benefit
Beef and sheep	7.2	7	6.2	4.9
Beef only	6.2	6.9	4.3	5.3
Sheep only	6.4	3.5	6.8	6.2
Overall average	6.6	6.6	5.3	5.3

No. of Respondents that provided ratings (n)				
Beef and sheep	16	12	13	15
Beef only	21	20	20	19
Sheep only	5	4	6	5
Total	42	36	39	39

Impact of Changes

Environmental

Figure 41: A column graph showing the average ratings of respondents regarding the impact of 'Economic benefit' changes.

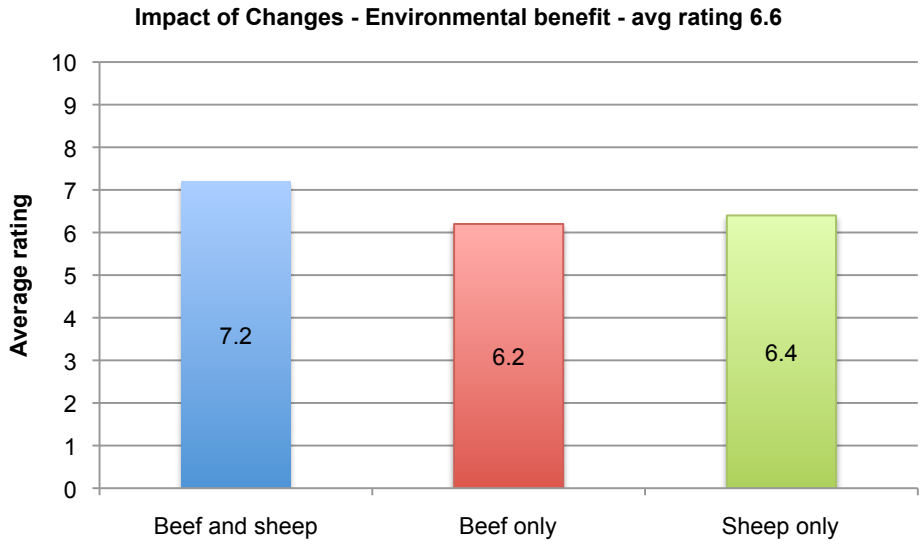


Figure 42: 6 respondents from the 'beef & sheep' group commented on improvements to pasture and ground cover and resulting improvements in soil, regrowth and less water runoff. (6 mentions) 2 respondents mentioned improved and better utilised pasture while another mentioned the provision of shelter. One commented that environmental benefits were long term.

Environmental benefits (Beef & Sheep producers)	No. of mentions
Pasture and ground cover improvements • more ground cover will lead to better pastures x 2 • less cropping/more pastures reducing change of soil erosion, improving soil. • pasture improvement • pastures recovering faster • better regrowth less water runoff	6
Improved and better utilisation of pasture • Grow more feed, grow more meat • full usage of all grown feed e.g. kg/dm/ha	2
Provision of shelter and total cover	1
Long term benefits	1

Impact of Changes

Figure 43: Respondents in the 'beef only' group noted increased pasture or ground cover and more persistent pastures as being a benefit to the environment. (7 mentions) 3 respondents noted improved water quality as a benefit of measures undertaken such as fencing off of creeks. Shelter belts had helped in areas of stock health and pest control

2 respondents noted improvements in soil health. One respondent felt current practices were more 'sustainable' generally. A couple of respondents mentioned current issues for the environment as being degradation by a large wallaby population and another suggested higher stocking rates could cause damage in wet conditions.

Environmental benefits (Beef only producers)	No. of mentions
Improved and more persistent pasture cover environmental benefit • Good ground cover • More ground cover • More ground cover, native pasture – bushland recovering • Better pasture species • Seaweed extract application achieves more persistent pastures • More persistent pastures – 10% so far • Rotational grazing increases plants/m2	7
Better water quality • All water courses fenced • No salinity problems	3
Planting of shelter belts provides environmental benefits • Planting of shelter belts to improve pest management and stock condition • Extensive shelterbelts and plantations established	2
- Increased soil activity, slowly increasing PH levels naturally, carbon storage - Environmental issues dealt with over last 30 years, not only recently - More sustainable systems - Older grasses such as Cocksfoot more persistent and resistant to grubs - Farm has always had reasonable ground cover & is constantly improving fertility but balanced by degradation caused by large wallaby population - Higher stocking rates result in more pasture damage when too wet – especially in gateways	1

Figure 44: One 'sheep only' producer mentioned that though there was definitely more ground cover, pastures if anything were underutilised and some were going rank.

Environmental benefits (Sheep only producers)	No. of mentions
- Definitely more ground cover, pastures if anything are under-utilised and some go rank. - Not sure of sustainability of exercise	1

Impact of Changes

Productivity

Figure 45: A column graph showing the average ratings of respondents regarding the impact of 'Productivity benefit' changes.

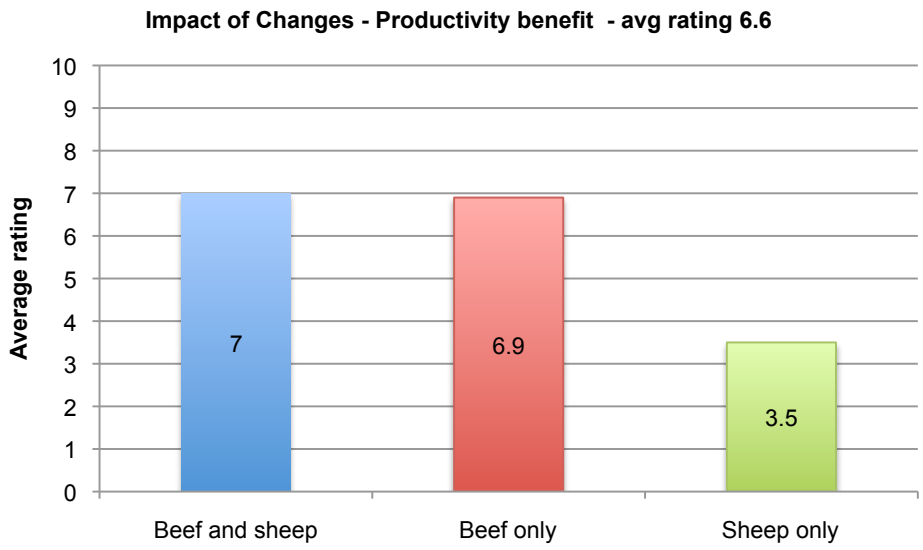


Figure 46: Higher weaning weights and better survival rates for lambs were mentioned as benefits of changes made by the 'beef & sheep' producers group. Increased beef per hectare and increased prices for finished articles were other benefits mentioned. 2 respondents noted scanning and weaning percentages had risen. One respondent noted the need for more time to better assess any gains.

Productivity benefits (Beef & Sheep producers)	No. of mentions
Higher weaning weight for lambs & better survival rates • higher weaning rate due to crossed ewes • prime lambs – higher weaning survival & higher scale weight • weight gains for lambs due to pasture species & grazing management & better understanding of nutrition • management of lamb's meat weight needed with grazing tools used	4
Improved pasture has benefits for increased production • more beef per ha • increase price of finished article by increasing meat quality	2
Scanning and weaning percentages rising • scanning & weaning % with lamb enterprise has increased from 30% - 100% with ewe lambs • Increase in ewe scanning % from 110% - 160% in 3 years	2
Improved cash flow	1
Need more time to better understand any gains per ha.	1

Impact of Changes

Figure 47: There were positive comments by some of the Beef only group about increases in productivity, carrying capacity and profits due to changes made in the last few years. (7 mentions) One respondent commented that his farm earning capacity had *doubled in 5 years*. Quicker weaning and turn-off rates, and fatter claves were also mentioned. Changes made to grazing and pasture management were seen as being beneficial by 3 respondents with one noting the benefit of native grasses.

Productivity benefits (Beef only producers)	No. of mentions
Greater productivity/profits have resulted from management changes • total stock nos. & sales have increased over last 5 years (herd 1100 – 1500), (550 – 900 sales) • greater profit per ha with no greater labour input • farm earning capacity doubled in 5 years • greater carrying capacity – built low nos. from 800 – 970 • still fine tuning but expect to gain more beef per ha • pasture quality improvements have led to higher production • move from set stocking has seen big improvement in the DM/ha produced	7
Quicker weaning and improved calf weight gain • calf size and weaning weights vastly improved since using AI bulls • Fatter calves quicker • better and earlier turn-off rates and weights	3
Changes to grazing and pasture management have brought positive results • 3 day grazing in infancy but important for pasture/pasture clover content and species • better/more pasture production • some areas native grasses more beneficial where new varieties struggle in cold conditions	3

Figure 48: A couple of respondents from the sheep only group reported higher prices and quicker lamb weight gains as a result of management changes in the last few years.

Productivity benefits (Sheep only producers)	No. of mentions
- higher prices - lambs gaining weight quicker (300gms/day) - better feeding regime - no beef now - need for help with sheep foot rot problems – why no inoculation?	1

Impact of Changes

Figure 49: The majority of respondents indicated that their productivity benefit had been higher in the past four years than the previous four (26 respondents). A smaller amount indicated that it had not been higher (12 respondents), while 9 respondents were unsure.

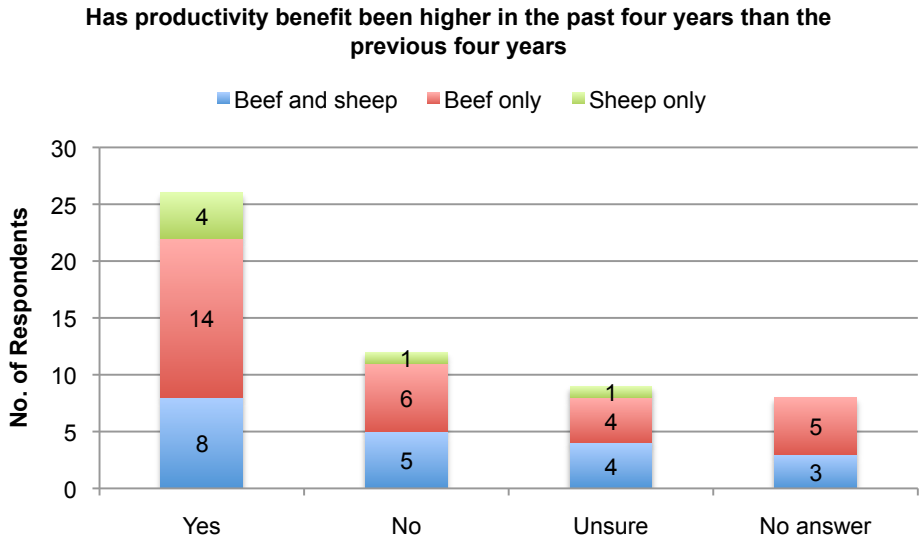


Figure 50: For 2 respondents from the 'beef & sheep' group, drought conditions had affected production in the last few years although as one respondent put it the 'improved country still outperformed the old". Improved pasture and pasture utilisation was seen as having a beneficial effect on production by 2 respondents while another mentioned improved water availability and efficiency

Breed selection and ewe management had had a positive effect for one respondent and another had found that an increase of information available had allowed him to accessed balanced views and information appropriate for his operation. One respondent noted the problem of uncontrolled grazing.

Productivity gains over the last four years (Beef & Sheep producers)	No. of mentions
Drought conditions have affected productivity gains • drought has curtailed production • 3 years of last 5 below average rainfall – but improved country still outperformed old	2
Improved pasture & pasture management has had beneficial effect. • redevelopment of pastures beneficial • better utilisation of pastures	2
Much water & ability to apply increased pasture	1
Breed selection & ewe management led to increase in production	1
Increase in amount of information available – greater balance of views and advice to adopt. – increase in animal growth rates $/ha net	1
Production affected by uncontrolled grazing with native animals and rabbits.	1

Impact of Changes

Figure 51: 3 respondents from the 'beef only' group mentioned the negative effects of the drought on production and another, the problem of the explosion of wallaby and possum numbers. 2 respondents commented that better management and control had brought productivity benefits.

Productivity gains over the last four years (Beef only producers)	No. of mentions
Negative effects of drought on production • difficult season • poor pasture (run out) no hay production	3
Better management has brought benefits • Putting into practice all applicable information suitable for my operation • Better management control & improvements	2
Huge explosion of wallaby & possum numbers	1
Production up but income (on tax) way down	1

Figure 52: 1 respondent from the 'sheep only' group mentioned better weaning rates and turnoff had had a positive effect on productivity. Another mentioned more cropping due to irrigation and a much higher stocking rate.

Productivity gains over the last four years (Sheep only producers)	No. of mentions
- better weaning rates and turnoff - more cropping due to irrigation – much higher stocking rate due to assured Autumn break - sheep footrot problems	1

Impact of Changes

Economic

Figure 53: A column graph showing the average ratings of respondents regarding the impact of 'Economic benefit' changes.

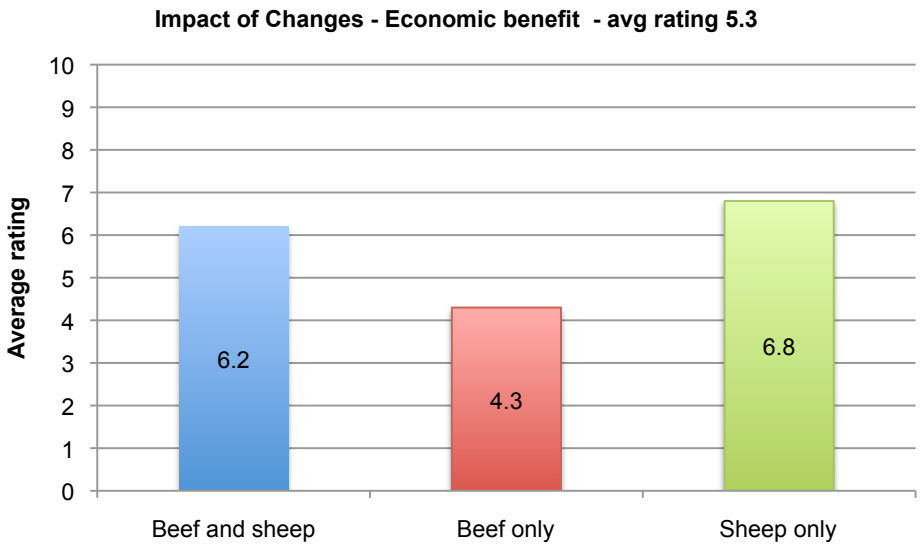


Figure 54: 3 respondents in the 'beef & sheep' group noted that higher productivity has brought economic benefits. The prices gained for sheep sales are seen as good at the moment particularly 'cross bred' lambs or as one respondent humorously commented 'anything that looks like a sheep' is selling well at this time.

Economic benefits (Beef & Sheep producers)	No. of mentions
Economic benefit from higher productivity • more product to sell • increased productivity will help with cost of production • more 8.m (?) per hectare – three stocking rate etc and selling stock high weights.	3
Higher prices • higher prices have helped as much as costs • low meat supply on mainland VIC and NSW pushes up prices in TAS	2
Meat Sheep sales doing well. • Second cross lambs sell earlier and for more. • Anything that looks like a sheep sells well.	2
Economic benefit can now be calculated by 'pricing out diet' from new species, extra fertiliser etc. to check economic gain – or not.	1

Impact of Changes

Figure 55: Improved livestock management practices and improved pastures have meant an increase in productivity and economic benefits for some 'beef only' respondents (7 mentions) and although beef prices were not high one respondent believed that as the number of stock per Ha increased his income had increased. Higher gradings, earlier weaning and healthier animals had also brought economic benefits. One respondent commented that producers couldn't control prices but could try to refine COP and productivity to improve returns.

Economic benefits (Beef only producers)	No. of mentions
Improved stock management & pasture management have seen economic benefits. • More flexibility of production system has brought economic benefit • greater longevity from pastures • produced more beef • less tail in our calf drop, more calves to sell • earlier weaning results in healthier animal, lowering the ref bill • higher growth rates, better gradings. 90% & optimum grade • producing more Kg beef/ha	7
Higher numbers but prices down. • Higher numbers but beef price has reduced. Hope will improve? • higher production – maybe lower return • although prices per head have not have increased - the number per ha has and this has increased income.	3
Producers can't control product price so try to refine COP and productivity to improve returns.	1
Repeat calf buyers looking to buy our weaners	1
Sometimes depends on market forces and where stock are sold	1

Figure 56: 3 respondents from the "sheep only' group mentioned that higher prices and demand for lamb should result in economic benefits. Another commented that his income from livestock was slightly less than previous years.

Economic benefits (Sheep only producers)	No. of mentions
Better prices, higher income • expecting a higher net income • better prices due to lamb shortages • high prime lamb/mutton prices	3
Income from livestock slightly less than previous years so no economic benefit	1

Impact of Changes

Social

Figure 57: A column graph showing the average ratings of respondents regarding the impact of 'Social benefit' changes.

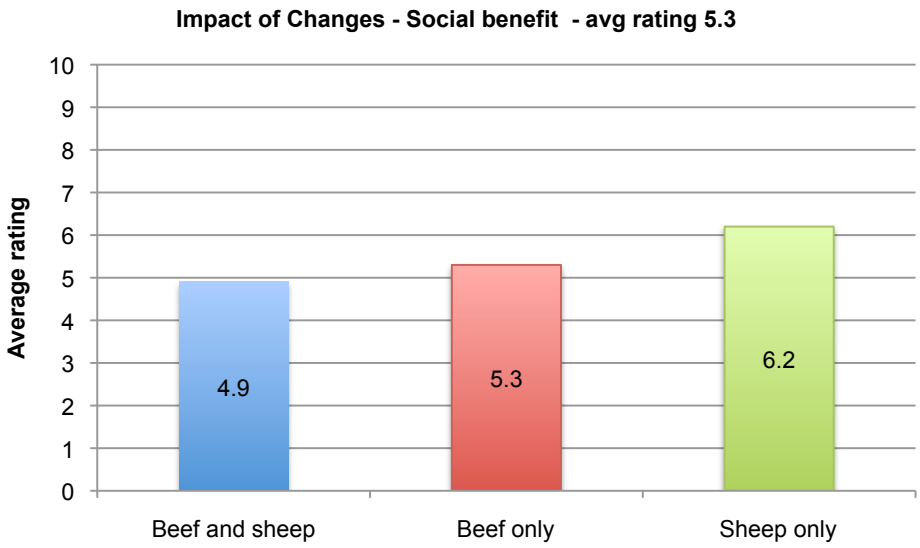


Figure 58: A couple of respondents from the 'beef and sheep' group noted that tighter/improved management systems had lessened risk and stress. They received encouragement from other successful producers and enthusiastic employees. One mentioned the benefit of improved productivity was a higher standard of living. One respondent was still dealing with stressful issues such as getting through to public servants and the problem of native animals and rabbits.

Social benefits (Beef & Sheep producers)	No. of mentions
Reduced stress & more certainty through good management systems • do regular feed budgets (based on dairying) reduces risk of getting caught with unfinished stock	2
Benefits of successful business – higher standard of living	1
Access to better performing producers an encouragement	1
Employees supportive - keen to implement changes	1
None yet	1
Still dealing with stressful issues. • trying to get through to public servants • loss of production due to native animals and rabbits • weeds to be on whole of state.	1

Impact of Changes

Figure 59: 3 respondents from the 'beef only' group found that changes and improvements had given them some extra time and the encouragement that comes from good performance. Another mentioned the recognition at local, state and national level of productivity gains and the quality of product produced.

Two others however, found that extra time was needed for management and one that a high stocking rate needed to survive input costs had made it harder to get away for a break. Alternatively one producer had found more time for holidays and travel. One respondent found that productivity gains had been offset by higher costs.

Social benefits (Beef only producers)	No. of mentions
Extra time and encouragement of good performance. • Easier management of farms overall • Satisfying to see cattle performing well • Slight improvement in time	3
Greater time needed in management • high stocking rate – to survive input costs – harder to get away for a break	2
Peer, industry support • through sharing of information at field days etc. – diffuses pressure, allows for peer group support • motivation and discussion with like persons	2
More holidays and travel	1
Productivity gains have been eaten away by higher costs	1
Recognition at local state and national level of productivity gains and quality of product produced.	1

Figure 60: Of the 'sheep only' producers, one mentioned reduced stress and the other that property, pastures and stock appeared to be going well.

Social benefits (Sheep only producers)	No. of mentions
- property, pastures and stock appear to be good - reduced stress	2

Impact of Changes

Influence of Red Meat Target Program

Figure 61: Overall, respondents indicated that extension activities and information sources provided by the Red Meat Target Program had a moderate influence on improving the profitability and sustainability of their red meat farming enterprises (overall average rating 6).

'Beef only' producers had the highest average rating (6.4), followed by 'Beef and sheep' producers (5.7) and 'Sheep only' producers (5.4).

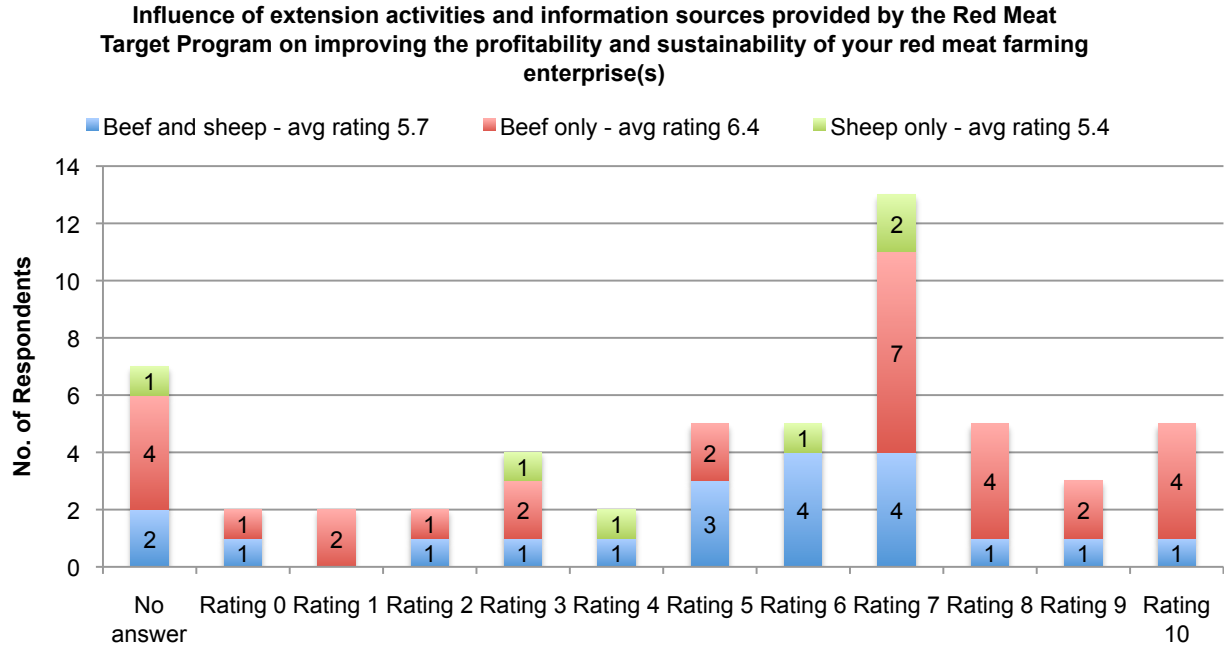


Figure 62: Positives of the program mentioned by respondents in the 'beef and sheep' group included access to new and challenging ideas which stimulate change and the provision of balanced and unbiased 'no product bull' information and understanding of the steps needed to be taken to make improvements. One respondent from Northern Tasmania suggested that programs aimed at more varied operations which included mixed cropping would be good and more program events to be run in the northern area.

Influence of extension activities and information sources provided by the Red Meat Target Program' on improving profitability and sustainability - Comments on Ratings (Beef & Sheep producers)	No. of mentions
Provides awareness of and access to new ideas & challenges. • kept being challenged • exposure to new ideas and information –stimulates change and improvements	2
- Provides balanced and unbiased information - no "product bull" just the facts you see and the steps to improve - Need programs run in Nth Tasmania – more aimed at mixed cropping, beef & lamb - Program not aimed at high input, high production pasture species - pasture information aimed at average/majority of sheep & beef producers - Hard to measure actual $ at this stage.	1

Impact of Changes

Figure 59: 5 Respondents from the 'beef only' group commented on the benefits to the beef and sheep industry of the RMT Program being the provision of sound, balanced information for beneficial change. One respondent pointed out that extension work was essential for the industry as a whole to ensure the quality of beef production and a place in the high value market.

Another suggested the benefit of the RMT program could be enhanced with better one-on-one extension services to farmers. A couple of respondents commented they were not necessarily in favour of the use of fertilisers advocated or the irrigation methods but one said that they had benefited from the activities despite this.

Influence of extension activities and information sources provided by the Red Meat Target Program' on improving profitability and sustainability - Comments on Ratings (Beef only producers)	No. of mentions
Good program and good way to spread sound ideas and advances in industry. • good, beneficial program x 2 • all these things enable changes in farm management to evolve to meet changing circumstances and improve operations – no one magic bullet • generally accepted that RMT provides sound information for beef/lamb producers from all areas. • increases confidence in direction you are taking	5
Extension effort essential for progressing the industry. • extension to proactive producers is easy & industry badly needs majority of producers to supply high quality beef to secure the future in high value markets • RMT great significance to business – could be enhanced with better extension services one on one to farmers	3
Not always in agreement with methods although some benefits from program • not always in agreement with increase in fertilisers and irrigation methods – generalised systems don't always work on diverse & different farms • benefited from these activities though do not apply chemical fertilisers or use chemical spray.	2
More Beef from Pastures interesting but limited benefit	1

Figure 60: One producer from the 'sheep only' group pointed out the difficulty of finding time to attend workshops for a producer with a young family and the need to work off farm. One mentioned having attended a *Healthy soils* workshop and another was still not totally sure of the sustainability of methods advocated.

Influence of extension activities and information sources provided by the Red Meat Target Program' on improving profitability and sustainability - Comments on Ratings (Sheep only producers)	No. of mentions
- not totally sure of sustainability - attended healthy soils 2 day workshop recently - don't have a lot of time to attend field days with young family and working off farm.	1

Impact of Changes

What is needed to assist Tasmanian red meat producers

A variety of suggestions have been made about ways to assist red meat producers in Tasmania. Many supported the continuation and expansion of existing programs with more R&D and extension activities being well supported. Extension services were seen as particularly important in taking results *of interesting research happenings in Tasmania to be communicated to farmers*. Some respondents suggested the need for more on ground staff to work with producers.

A number noted the importance of R&D and extension activities for the red meat industry generally and the importance of the industry to the State as justification for such programs. There was some call for the expansion of delivery services to a wider area (e.g. King Island) and also to engage mixed producers more. 'On farm' trials in realistic settings with 'farmers telling of their experiences' also received support.

There was also support for maintaining or developing regular producer discussion groups with perhaps visiting consultants for producers to access information and share ideas. A number of suggestions were made about areas needing to be addressed by R&D or established programs. These included uncontrolled grazing issues, the benefits or otherwise of use of such things as vitamin A D E & B12 & other supplements such as trace elements, biological farming, fertilizer use and alternatives, genetics, Foot problems, eco systems of the soil, marketing targets and quality assurance.

Beef & Sheep Producers

You are missing a lot of mixed producers and this is where you can change ideas.

Beef only Producers

More R&D trials across the state are needed that are relevant to breeders and weight gainers. Introduction and management of discussion groups similar to dairy and a significant increase in extension delivery.

I believe regional discussion groups led by leading consultants are essential. Beef research in Tasmania is not apparent and for one of the biggest employers in State this needs rectifying.

Need a market that demands a better price.

Farmers need to see demonstrations in action of living farms in average locations – not Elliott or Winnaleah. That has the greater impact.

Figure 61:

Suggestions about what is needed to assist red meat producers in Tasmania in terms of service delivery, information, R&D (Beef & Sheep producers)
Need for • R & D and information to be challenged • more activity in some areas e.g. King Island • more staff in both research and extension • more on farm research & just telling of farmers' experience • more one on one extension delivery (would be fantastic) • more interaction with other producers and advisors • more information and calculators based on Winnaleah groups as greater % of Tasmania beef industry in higher rainfall area • program to engage mixed producers, cropping, beef & sheep • up-to-date information – what is available 'now'
Need to continue/maintain • relevant programs x 2 • information days • on ground trials that are real life • existing discussion groups • Prograze program
Need to assist in development of • more discussion groups which motivate participants on presented topic
Need to address issues/conduct research in the following areas • benefits or otherwise of use of such things as vitamin A D E & B12, other supplements such as trace elements. • uncontrolled grazing, population of native animals & cause & effect on small business

Impact of Changes

Figure 62 & 63:

Suggestions about what is needed to assist red meat producers in Tasmania in terms of service delivery, information, R&D (Beef only producers)
Need for • enough staff to effectively deliver targeted projects to end users • R&D specific to each different enterprise. MLA & DPWE should widen areas of delivery of service i.e. field days, workshops etc. • regular one on one farm visits to deliver new technology to the large % of farmers with lower skills and the terrible ROI. • results of interesting research happening in Tasmania to be communicated to farmers • more extension officers on the ground. More money in the DPIWE System, less bureaucracy x 2 • more R&D and education of stock agents • more R&D trials across the state relevant to breeders and weight gainers. • Beef research in Tasmania not apparent and for one of biggest employers in State this needs rectifying • more field days/more industry days like Dairy/more specific R&D info days, Advanced pasture courses. • more demos in action of living farms in average locations - not Elliott or Winnaleah – has greater impact • More whole farm field trials as opposed, manipulated e.g. Winnaleah • pre-development of extending R&D & industry information to producers
Need to continue/maintain • pasture species selection, R&D on fertilizer use and alternatives, selection of finishing/fattening crops. Marketing targets and quality assurance programs • R&D program • on farm trial sites in a district to district level to strongly evolving trends in pastures, fertiliser and genetics. • types of program that have been run. They should be maintained as support for farming community essential
Need to assist in development of • consistent monthly or two monthly meetings with a group of farmers on different farms (similar to Dairy) x 2 • regional discussion groups led by leading consultants • a market that demands a better price
Need to address issues/conduct research in the following areas • need better information on pasture species, establishment and management • more R&D trials across the state • getting farmers off the chemical treadmill – not through use of GM products but through biological farming
Most useful/relevant aspects of program • MLA pilot project with Navey & Magrard (Symm Jones) on farms at Winnaleah and surrounding areas over the past 12 months

Suggestions about what is needed to assist red meat producers in Tasmania in terms of service delivery, information, R & D (Sheep only producers)
More of same
More research on eco systems of the soils
Address issue of L/S foot problems

Final Comments

Beef & Sheep Producers

Not specialists in one area. Most programs cater to specialists in their regions. You must re-focus your programs and delivery to reap the rewards you want the industry to achieve.

Helpful and capable staff.

Should be ongoing (research always is)

Business skills and management should be the basic focus supported with productivity info.

Sometimes I feel the presentations are a little basic and maybe need to be stepped up into more complex issues.

The program is a fantastic starting tool for all sheep/ beef enterprises but for farmers to move to next level is very time consuming - for red meat - unless you supply or suggest consultant for farmer to use.

You can see what my hobbie horse is! It is very REAL... the remedy is there. Known as L080 - very efficient - ideal for rural use, trouble is they (Govt) trying to ban its use in Tas.

Beef only Producers

Please keep the program and continue to improve and communicate with farmers.

I feel that it has been better focused than some other expensive work and more farmer friendly so more of the effort is getting to the ground.

We feel that excellent efforts are being made from the various bodies but the reality of costs in implementing best practice and the huge gap between reality on farms and where the decisions are made, make it very difficult all round. Thank you for this overdue survey.

Commitment from DPIW to adequately service the beef industry to a similar level as Dairy and Crop.

In my opinion RMTP focus too much on pasture and should emphasis more on cattle breeding.

Extension officer I dealt with was excellent, always willing to source extra information. NRM facilitation of discussion group provides ongoing source of current information.

It is short-sighted that RMT is so rundown in Tasmania. The Red Meat Industry can be of significant benefit to rural communities and by greater assistance to producers we can increase kg/ meat/ha and therefore increase throughput in the large and small processing facilities thereby securing greater employment.

I believe it is inadequate for such an important industry that has so much unmet potential.

We are fast approaching the time where chemical fertilisers will not be available due to unavailability of oil - similarly for pesticides. Learn to farm naturally now! There is plenty of information out there on the success of farming practices away from the chemical treadmill.

Don't stop trying.

Where will the beef industry be in 10 - 15 years time, next generation won't be able to afford to purchase land.

Sheep only Producers

These have been adequate for producers to participate in RMT's.

Feet problems statewide

7.2 Appendix 2 Summary of case studies

Appendix 1I Summary of Case Studies for Red Meat Targets Program Review

Item	Case Study						
	1	**2**	**3**	**4**	**5**	**6**	**7**
enterprises	fattening steers*, agistment	cow herd selling steers at 15 months	1st X ewes* potatoes fattening steers	Cow herd * trading steers	Cow herd sell at 18-27 months* trading steers	Poppies and peas* grain 1st X ewes	forestry* cow herd 1st X ewes vegetables
rainfall (mm)	1200	900-1000	1100-1200	750	815	650 & irrigation	850 &irrigation
involvement in RMT	Winnaleah discussion group*	Winnaleah MBfP financial benchmarking* MLA magazines	Prograze* Meat Profit day	Winnaleah* Prograze update	MBfP benchmarking,* MLA days Winnaleah discussion group	Winter wheat grazing* MBfP MLA fielddays	Winnaleah* financial benchmarking
technology/ies	rotational grazing* N, P and K fertilisers Type of steers	rotational grazing, benchmarking against others pasture budgeting	increase speed of rotation shift birth date buy heavier steers	intensive rotational grazing using skills from Prograze (had not used before)	grazing at 3 leaf stage	grazing winter wheats with existing fencing	intensive block grazing
Started	2006	2006	2006	2006 but two years of drought	2006	2009	2007
subjective benefits	quicker turnoff better cash flow	better pastures	rekindle interest in farming	improve pastures without renovating	reduced Browntop in pastures	good feed replacing fodder	more turn off
objective benefit	25%increase in stocking rate	COP/ kg dropped from $1.78 to $1.30	increase red meat turn off by 20-25%	20% increase in income in last year	20% increase in 2009. Not sure how much due to RMT	grazing worth about the same as the fodder forgone	went from 200-260 kg /ha turn off
extra costs	small increase in fertiliser	a little extra electric fencing	some extra electric fencing 10% more fertiliser	watering points, N fertiliser electric fencing	very little	none	minimal
red meat increase (Live wt kg/ha)	in line with stock rate increase	not provided turnoff 500kg/ha	20-25% turnoff 284kg/ha	25% turnoff 350kg/ha	25% turnoff 230kg/ha	same turnoff 200kg/ha	25-35% turnoff 260kg/ha
risks	safe country	less because of knowing what is ahead	feed budgeting reduces risk	lower as now have steers as buffer	no	none can use irrigation	watch pugging on flats
environmental benefit	better ground cover	knows when to lighten off	no change	none	none	none	none
future	more persistent grasses	look at dairy pasture management	market niche for Tasmanian meat	more of the same still room to improve	happy with his system	use opportunistically change lambing	still has great room for increases
impact on neighbours	not much	mostly dairy farms	one changed lambing time	no	mainly dairy farms	30 at fieldday at his farm	none

*main one

7.3 Appendix 3 Summary of agribusiness interviews

Red Meat Targets Review

Summary Results

21 July 2010

Contents

Overview 3
Introduction 4
Awareness of Red Meat Targets Program 4
Extension activities involved in or attended and their usefulness 4
Impact of RMT extension activities on producers 5
Benefits that producers have gained as a result of changes made 6
Impacts on participants' organisations 6
How could have RMT involved organisations more effectively 7
Type of activities needed to support the Tasmanian Red Meat Industry in the future 7
Interest in being involved in future red meat programs in Tasmania 8
General Comments 8

Overview

The 7 participants involved in this review of the Red Meat Targets Program were generally positive about its achievements. All were aware of the program and had attended or been involved in one or more of the programs extension activities. The *Winnaleah towards 2000 demonstration* site was rated the most useful activity (average rating of 8.8) followed by the *Meat Profit Day* (average rating 8).

The main impacts of the program on producers were noted as being improvements in their awareness and understanding of different grass species and blends, fertiliser use as well as grazing strategies. The main impacts of the program on participants' organisations were highlighted as being financial, as a result of increased sales of infrastructure and better quality inputs. Participants also noted improvements in knowledge and their ability to better advise and inform producers.

Most participants were happy with their level of involvement in the program and were interested in future participation in red meat programs in Tasmania.

Introduction

7 participants were involved in this review of the Tasmanian Red Meat Targets Program. Organisations represented in the review included:

- Elders Rural Services
- Roberts Ltd
- AK Consultants
- Rural Co. Holding
- Incitec Pivot Fertilisers

Respondents included account managers, branch managers, consultants and agronomists.

Awareness of Red Meat Targets Program

With an average rating of 7.5, 85% of the participants were already aware of the RMT Program. Only 1 person indicated a low awareness.

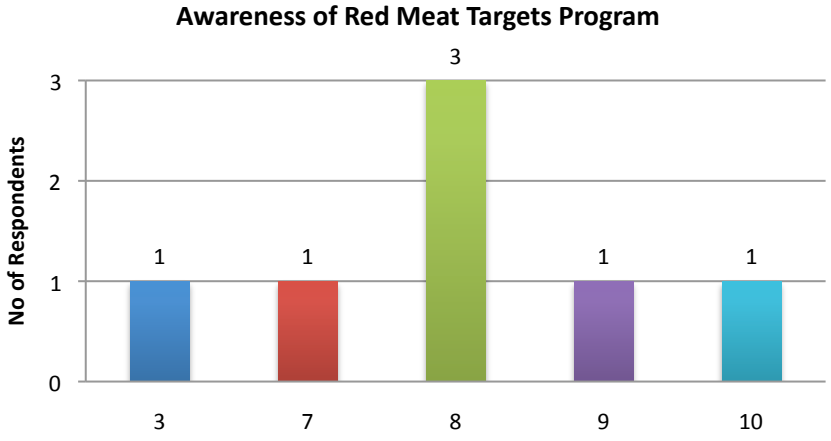


Figure 1: Awareness of Red Meat Targets Program

Extension activities involved in or attended and their usefulness

The most commonly attended activities were the *More Beef from Pastures regional activities and Expo's* (5 responses), the *Winnaleah towards 2000 demonstration site* (4 responses), the *PROGRAZE and PROGRAZE Update courses* (3 responses), followed by the *Meat Profit Day, Field days at other RMT R&D sites* (2 responses each) and the *Better Fertiliser Decisions courses, Making More from Sheep activities* and *Red Meat Target Financial benchmarking* (1 response each).

Figure 2 below shows that all Red Meat Targets extension activities were viewed as useful , with the *Winnaleah towards 2000 demonstration site* being rated the most useful (average rating 8.8) followed by the *Meat profit day* (average rating 8).

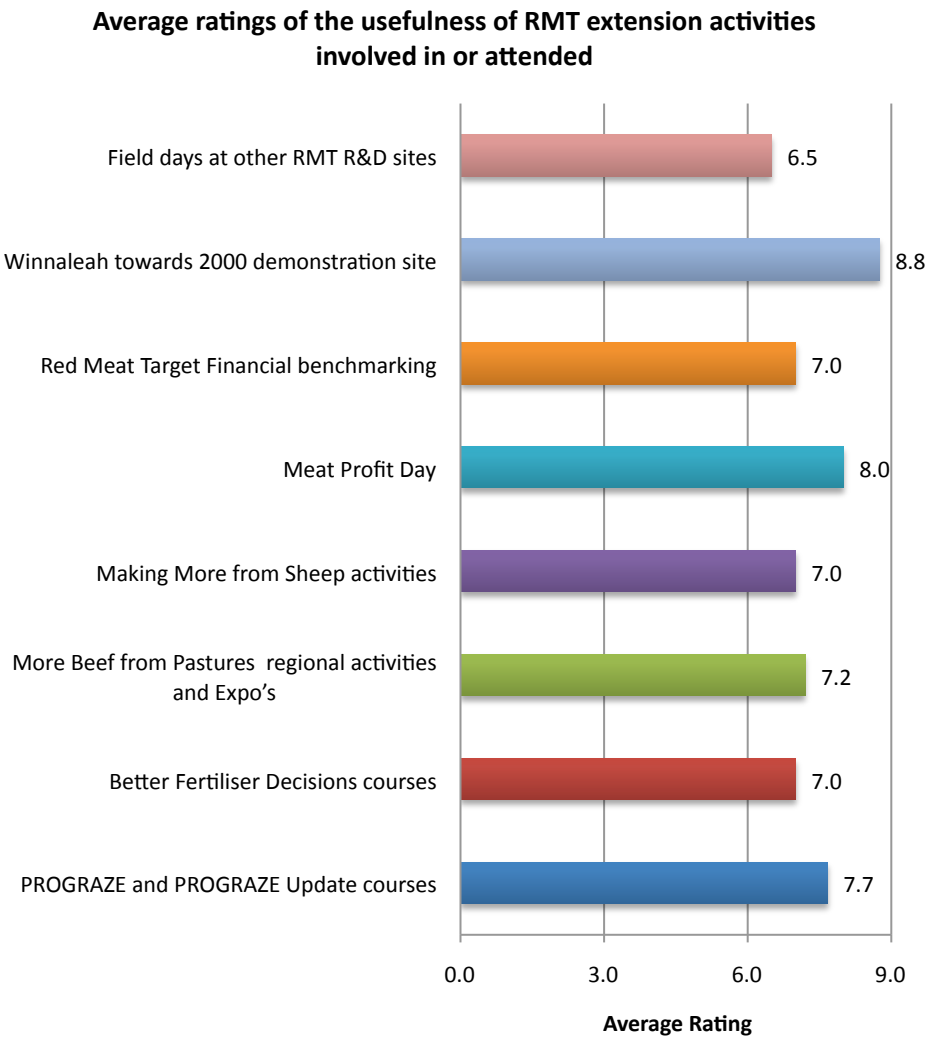


Figure 2: Usefulness of Red Meat Targets extension activities

Impact of RMT extension activities on producers

The main impacts mentioned were improvements in producers' awareness and understanding of different grass species and blends, fertilisers and fertiliser use as well as improved understanding of grazing control. Other impacts mentioned by participants included:

- *We have **requests for more specific seed mixes and blends** after attendance at these field days. There is also **more awareness of highly productive grass species** and blends.*
- *About 6 of our group members have changed their practices. They have **increased their level of rotational grazing systems**, which they were not aware of before.*
- *Gives them an **indication of fertiliser use and an understanding of their growth stats**.*
- *Those that attended have a **better understanding of technical grazing control and a better awareness means better uptake**.*

- ***Improvements in fertiliser decisions and understanding of different grasses**. They are starting to realise the impacts of production/hectare and stocking rates. Soil testing has been taken to the next level and farmers are more aware of profit drivers.*

Benefits that producers have gained as a result of changes made

Benefits gained by producers include improved profits and production due to a better understanding of the costs of production, better feed budgeting and increased stocking rates. Other benefits mentioned included:

- *There is a **greater focus on the cost of production** and getting more beef from pastures. There is more **focus on profit drivers** (kgs of meat per hectare). Farmers are also more open to benchmarking.*
- *More **accurate feed budgeting** - they are less reactive. **Increased stocking rates**.*
- *Higher **stocking rates and therefore more profitable**.*
- *Those that understand grazing **achieve more beef/hectare production.***
- *More fencing, irrigation and genetics (although not touched on to the same level), **fat scoring and beef scoring and more profits**.*

Impacts on participants' organisations

Impacts on participants' organisations as a result of involvement in the RMT program were noted as increases in sales due to producers requiring more infrastructure and more sophisticated grass species. One participant noted that activities such as the Winnaleah trials have resulted in valuable outcomes which have been used to make recommendations to clients. Other impacts mentioned included:

- *We have **encouraged and financed our field staff** (agronomists and animal production staff) to attend these events (especially Prograze and More beef from pastures). It is important to up skill them so that their interactions with producers are more meaningful.*
- *We have **sold more inputs** (fencing, water equipment) due to a need for better quality infrastructure.*
- *Winnaleah trials has been a good indication of production from pastures. We have **used this information when giving advice and assessing the feasibility of irrigation.***
- ***Increased sales** of fertilisers and livestock.*
- *We are **starting to get smarter**. We are doing soil testing to make smarter recommendations.*

How could have RMT involved organisations more effectively

Participants generally felt that Red Meat Targets had engaged their organisations well. Comments included:

- *Nothing - **their information was good and they communicated with us** about events and outcomes from R and D projects. Collectively we could have done more to communicate knowledge around by holding information sessions with our own staff. We could hold sessions with our own staff to pass on information and encourage interaction with farmers and the wider community.*
- *We have been a sponsor so have been very involved. They have been very **good at keeping us informed.***
- *Not really - they do help beef producers, but no real impact on elders as retailers.*
- *Nothing it is a **great program.***
- *It depends on the level you want us involved. We are **happy to help with trials and always involved in attending events.***
- *Nothing **they have been great**. Sponsored the Winnaleah trials and helped with field days.*

Type of activities needed to support the Tasmanian Red Meat Industry in the future

The work done by the Red Meat Targets Program was noted as being valuable, with suggestions for future support in areas such as genetics, *real* profit drivers and more *fresh* ideas about grazing. It was also suggested that similar activities including the formation of groups, be replicated in other areas of the state. Comments included:

- *There has been a strong focus on pastures to produce meat. Maybe they could now assist with selection of genetics (through objective rankings and breeding values) and the promotion of leading stock producers in the region. **More focus on genetics.***
- ***Facilitating the formation of groups in other areas of the state**. It has worked well in our area with good producer feedback.*
- ***Trials like Winnaleah are good** and looking at fattening store lambs.*
- *What they are doing is good - don't change it. Possibly **more fresh ideas about grazing**.*
- ***Winnaleah was good and should continue** to investigate other options. They are also yet to reach the 2000 target. There needs to be **more financial workshops** as many do not recognise the importance of managing records.*
- ***More understanding of real profit drivers**. Going back to genetics and animal conditions.*

Interest in being involved in future red meat programs in Tasmania

The majority of participants were interested in future involvement with red meat programs in Tasmania, in the similar capacity to what they have already committed to during the Red Meat Targets program (sponsorship and advertising).

- ***Willing to be a supporting partner*** *in kind rather than financially. We can get clients to go along to the events and we will continue to fund our staff to attend.*
- *Yes - old fashioned* ***sponsorship and advertising*** *has worked really well.*
- *Not sure at this stage*
- *Yes - it has been a great support to us so we will support them.*
- *Yes - we are open to anything*
- *No doubt!*

General Comments

- *Have* ***not been involved since 2007****. Do not know what has happened with the program since then.*
- *It is* ***good that it exists****. Traditional methods of extension through the DPI do not exist anymore, so there is no other extension in the industry.*
- *Do not know enough about it to add. Peter's presentations have always been interesting.*
- *Thought it was* ***excellent*** *and hope that it continues.*
- *They have put a lot of money into systems in Tasmania and we are* ***very thankful to participate****. If we all continue to work together we will get great outcomes.*

7.4 Appendix 4 Cost benefit analysis report

APPENDIX 4

Cost-Benefit Analysis for the Review of the Red Meat Targets Program 2004-2009

1. Introduction

The following Cost-Benefit Analysis (CBA) provides an indication of the likely impact of the investment in RMT. The analysis has required the development of a number of assumptions that are based on data provided from other components of the review. To some extent, the CBA has been constrained in its accuracy due to the lack of follow-up data assembled in the program on the numbers of producers who have changed practices as a result of the program and on the impact of the changed practices on profitability. This lack of accurate data is most likely due to the lack of, or insufficient attention being given to, any ongoing evaluation strategy (particularly economic evaluation) during the five year program. It could be noted however that the lack of such data is not unique to this program.

The CBA has been undertaken for both total costs of the program over the five years (MLA, DPIWE and TIAR) as well as those for MLA only. In the case where only MLA investment was considered, only a proportion of the total benefits valued has been attributed to MLA. This proportion is based on the costs contributed by MLA as a fraction of the total investment.

The Present Value of Benefits (PVB) and Present Value of Costs (PVC) were used to estimate investment criteria of Net Present Value (NPV) and the Benefit-Cost Ratio (B/C Ratio) at a discount rate of 5%. The internal rate of return (IRR) was also estimated. The PVB and PVC are the sums of the discounted streams of benefits and costs. The discounting is used to allow for the time value of money, and the discount rate of 5% (in real terms) is that specified in the guidelines for CBA issued by the Council of Rural Research and Development Corporations.

Some sensitivity and breakeven analyses have been carried out for those assumptions considered to be the most uncertain.

2. Resources Invested

The financial investment made by MLA, DPIWE and TIAR in the RMT Program in each of the five years of the Program is reported in Table 1.

Table 1: Investment by Partner in RMT Program by Year
(nominal $)

Calendar Year	MLA	DPIWE	TIAR	Total
2005	141,900	223,600	64,500	430,000
2006	251,600	251,600	176,800	680,000
2007	116,610	253,500	136,890	507,000
2008	163,000	170,000	180,000	513,000
2009	48,000	170,000	140,000	358,000
Total	721,110	1,068,700	698,190	2,488,000

As mentioned earlier, this investment was made totally in Subprogram 1 (pasture production and utilisation) without servicing any of the other three planned subprograms. Hence, an

analysis comparing investment criteria across the four intended investment areas could not be completed.

3. Benefits Delivered by the Program

The major end benefit being pursued by this investment has been that Tasmanian Red Meat Producers have been stimulated to change management practices providing them and the Tasmanian community with a range of benefits.

The RMT Program has produced a number of benefits, some already captured by Tasmanian producers of both lamb and beef. These benefits are applicable to a range of different pasture based grazing systems as most benefits have been derived from increased feed production and quality as well as better utilisation of what has been produced. This has resulted in some cases in the ability to adopt higher stocking rates as well improvements in animal performance per head.

The benefits have been produced in the main by application of existing knowledge rather than new knowledge developed by the Program. Increased application by red meat producers of technologies and management practices have been manifest as indicated by the annual reports of the Program, the 2010 producer survey results, and the seven case studies undertaken as part of this review.

Benefits have been derived also from the collaborative nature of the program and the joint funding model. Integration of activities funded have been more effective and focused. There has been less wastage of resources and better outcomes via the improved coordination. Capacity building benefits for producers have also been delivered, particularly through benchmarking and the holistic approach to management promoted. These benefits may facilitate an increased capacity of producers to integrate new technologies available in the future.

An overview of benefits in a triple bottom line categorisation is shown in Table 2.

Table 2: Categories of Benefits Delivered by the RMT Program

Category	**Levy Paying Industries and their Supply Chains**	**Spillovers**	
		Other industries	**Public**
Economic	Reduced costs of production of existing products Increased efficiency of use of industry R&D resources	Tasmanian sheep and wool industry may have benefited	Increased efficiency of use of public R&D resources
Environmental	Improved ground cover and less erosion with reduced soil loss and nutrient export		Reduced soil and nutrient export to waterways so improving water quality

Social	Increased capacity of producers to take a holistic approach to management and make changes Reduced stress and increased well being		Improved social capacity for undertaking collaborative arrangements in R&D

As shown in Table 2, the benefits identified from the investment are predominantly private benefits, namely benefits to red meat producers in Tasmania. Some public benefits have been delivered however in the form of the environmental and capacity building benefits, and improved efficiency of application of government R&D funds. There may be some small spillover benefits to other enterprises (e.g. cropping and wool) on the farms of red meat producers.

Benefits to red meat producers will be shared with others involved in the supply chain including processors, marketers and red meat consumers. There are not likely to be any significant benefits to overseas producers or consumers of red meat.

The Australian Government's national and rural R&D priorities are reproduced in Table 3.

Table 3: National and Rural R&D Research Priorities 2007-08

Australian Government	
National Research Priorities	**Rural Research Priorities**
1. An environmentally sustainable Australia 2. Promoting and maintaining good health 3. Frontier technologies for building and transforming Australian industries 4. Safeguarding Australia	1. Productivity and adding value 2. Supply chain and markets 3. Natural resource management 4. Climate variability and climate change 5. Biosecurity *Supporting the priorities:* 1. Innovation skills 2. Technology

The investment has clearly addressed Rural Research Priorities 1 and 3 while indirectly addressing Rural Research Priorities 2 and 4. National Research Priorities 1 and 3 have been addressed by the investment.

4. Measurement of Benefits

The benefit from the investment that is valued in this analysis is the improvement in profit by some Tasmanian red meat producers. The other benefits identified in Table 2 have not been

valued, largely due to the difficulty in establishing their extent and in gathering supporting evidence of the linkages between the Program and the outcome leading to the benefit.

Sources of information

The CBA required a series of assumptions on the impact of the RMT Program. These assumptions have been made on the basis of information drawn from a number of sources. These include:

- Australian Bureau of Agricultural and Resource Economics
- Annual Reports of the RMT Program
- The responses to the producer survey reported in this review
- The case studies reported in this review

Red meat producers in Tasmania

The average number of broadacre farms in Tasmania over the period 2005 to 2009 was 1,159 (Table 4). According to the ABARE categories of broadacre farms this total comprised 532 beef farms, 323 sheep farms, 234 sheep-beef farms, and 70 mixed livestock farms.

Table 4: Five Year Average Numbers of Broadacre Farms in Tasmania (2005-2009)

Beef	Sheep-Beef	Mixed livestock	Sheep	Total
532	234	70	323	1,159

Source: Derived from ABARE (2010a)

The ABARE farm survey targets farming establishments that make a significant contribution to the total value of agricultural output (i.e. commercial farms). Farms excluded from the ABARE target population will be the smallest units, and in aggregate will contribute less than 2 per cent to the total value of agricultural production for the industries covered by the surveys. Only those establishments with an estimated value of agricultural operations (EVAO) above a certain threshold are included in the survey. The EVAO threshold for the most recent survey was $40,000. Also, a large proportion of sample farms is retained from the previous year's survey. The sample chosen each year maintains a high proportion of the sample between years to accurately measure change while meeting the requirement to introduce new sample farms to account for changes in the target population, as well as to reduce the burden on survey respondents (ABARE, 2010 b).

Producers involved in the RMT Program

The number of red meat producers involved in some way with the RMT Program was 400 (RMT Program Data base). Involvement included activities such as the following: attending field days, receiving newsletters, attending training courses, undertaking benchmarking. This meant that the reach of the RMT Program was quite wide with 35% of all Tasmanian broadacre producers involved in some way. If only the Beef and Sheep–Beef producers were included, this percentage would increase to 52%.

Producers making management changes

Annual Program Reports

Limited information on the number of producers changing practices was elicited during the program through exit surveys of producers attending Program activities. The 2007 Annual Report (page 5) states that producers were asked if they had made changes in response to attending previous RMT events. At some larger events 30% of respondents said they had made some changes rising to 70% at smaller events (10-40 participants), perhaps reflecting

greater engagement at the smaller events. The 30% response was reported also in the 2006 Annual Report (Page 8).

Respondents to Producer Survey
The producer survey reported in the current review provided written responses from 55 producers out of a survey sample of 200 producers drawn at random from the 400 producers who were involved in the RMT Program. Of these 55 producers, 49 were beef or sheep-beef producers, the subset of red meat producers considered the central focus of the CBA.

Of these 49 producers, 25 (51%) provided some details on the type of benefit gained from making management changes. The response also revealed that of the 49 beef and sheep-beef respondents, 22 (45%) stated that their productivity benefits were higher in the past four years. Also, of the 49 beef and sheep-beef producers, 23 (47%) gave an economic benefit rating in the range 5 to 10.

Based on the above information, it is assumed for the CBA that 22 (45%) of the beef and sheep-beef respondents to the survey made some significant management changes that impacted positively on their productivity and profits.

Nothing is known about whether management changes were made by the 145 non-respondents to the producer survey or the other 200 producers involved in the Program but who were not surveyed. However, it is likely that some of these also made management changes. Assumptions for these groups follow.

Non-Respondents to Producer Survey
It is not likely that the proportion of the 145 non-respondents (129 assumed to be beef or sheep-beef farms) making changes would have been higher than that for the respondents. Hence, the proportion of those making changes would probably lie between 0 and 45%. For purpose of the CBA this percentage is conservatively taken at half that for respondents or 22.5%. This meant that a further 29 producers in the survey sample of 200 were assumed to have made successful changes. Overall, the percentage of the survey sample making changes was 51 out of an estimated survey sample of 178 beef and sheep-beef producers or a change rate of 29%.

Producers not surveyed
It is assumed that the 29% change rate would have applied to those beef and sheep-beef producers not selected in the random survey. Assuming 89% of the 400 in the population were beef or sheep-beef producers (based on 49 of the 55 respondents), it follows that there were 356 less 178 (178) beef and sheep-beef producers in contact with the program who were not surveyed. It is assumed that a further 51 producers (178 x 29%) would have made management changes resulting in positive productivity changes and increased profit. Of the 356 beef and sheep-beef producers involved with the Program, the total number assumed to make changes that impacted positively on their profits was therefore 22 + 29 + 51 or a total of 102 beef and sheep-beef producers.

Change Elicited in Other Producers
An interesting finding from the seven case studies was that neighbours/other producers may have made changes as a result of observing and discussing options with the case study farmer. Three of the seven case studies reported such an event in answering the question: ‘Are any friends/neighbours thinking of taking up what you have done?’ Some of these changes may not have happened yet and some may be undertaken by farms not included in the 356 beef and sheep-beef producers involved directly with the Program.

It was estimated that for each ten of the 102 producers making changes there was one other producer who also made changes as a result, part of which can be attributed to the RMT Program. The total number therefore making changes is therefore estimated at 112 (102 +10) out of total population of 766 (Table 4).

Table 5 summarise the assumptions made.

Table 5: Assumptions Regarding Beef and Sheep-Beef Producers Making Management Changes that Resulted in Positive Productivity Changes and Profits

Group (beef and sheep-beef producers only)	Number	Number Making Management Changes	Proportion Making Management Changes (%)
Respondents to producer survey	49	22	45
Non-respondents to producer survey	129	29	22.5
Non-surveyed producers in contact with RMT	178	51	29
Producers not in direct contact with RMT	410	10	2
Total	766	112	15

Extent of financial gain assumed

The net cash incomes for Tasmanian broadacre farms over past years derived from the ABARE annual farm survey are shown in Table 6. It is interesting to note that the average over the five year period 2005 to 2009 is not that different to the twelve year average.

As for the producer numbers affected, it was decided to take as the baseline for the profitability of red meat producers only beef and sheep-beef producers. This was because the other two broadacre categories were significantly influenced by income and costs for crops and wool. Beef farms (ANZSIC06 Class 0142) were farms engaged mainly in running beef cattle while sheep-beef farms (ANZSIC06 Class 0144) were farms engaged mainly in running both sheep and beef cattle.

Table 6: Average Farm Cash Income, Cash Costs and Net Cash Incomes of Tasmanian Broadacre Farms, Beef Farms and Sheep-Beef Farms ($ per farm)

Group	5 year average Cash Income	5 year average Cash Costs	5 Year average Net Cash Income 2005-2009	12 year average Net Cash Income (1998 to 2009)
All Broadacre Farms	263,010	221,113	41,897	46,184
Beef Farms (532)	180,876	149,252	31,623	30,441
Sheep-Beef Farms (234)	371,475	330,107	41,368	45,696
Weighted average for Beef and Sheep-Beef farms (766)	239,101	204,500	34,601	Not calculated

Derived from ABARE (2010a)

The significant impacts reported in each of the seven case studies are shown in Table 7.

Table 7: Significant impacts reported in the case studies

Case Study	Impact
1. Fattening steers	25% increase in stocking rate
2. Beef cow herd	27% decrease in cost of production
3. Lambs and fattening steers	20-25% increase in turnoff
4. Beef cow herd and trading steers	20% increase in gross income
5. Beef cow herd and trading steers	25% more red meat liveweight/ha
6. Poppies, peas, grain and lambs	No significant benefit
7. Beef cow herd and lambs	25-35% increase in liveweight turnoff

The case studies suggest that conservatively these producers were obtaining about a 20% increase in turnoff or gross income. Some additional costs were also likely. For example, many of the improvements involved an increase in stocking rate involving an increase in variable costs (e.g. added fertiliser) and an increase in livestock capital and some subdivision (e.g. electric fencing).

The results of the case study interviews downplay the extent of additional costs incurred, implying that they were not overly significant. However, some allowance still needs to be made for increased costs.

The case study farms probably are in the top echelon of success as that probably was why they were nominated for a case study. Hence a reduced estimate of impact is used for the analysis. The assumption made here is that the average gross cash incomes for the farms benefiting would have increased by 10% and costs by 5% for both beef and sheep-beef farms.

Counterfactual and Attribution of Changes to the Program

Some allowance has to be made for the possibility that some of the changes made by producers would have occurred without the RMT Program and that some of the decisions to change would have been only partially influenced by the Program. Practice change decisions are complex in their scope and timing and are usually the result of a number of factors that build on the existing frameworks and state of mind. It is assumed that in the absence of the program, there would still have been some changes made.

It is assumed that the RMT raised the awareness the possibilities of change through demonstration, discussions, training etc and encouraged more producers to change, or at least contributed to the decision to change, or helped producers make changes more successfully than if there were no RMT. The producer survey reported that the RMT was considered to have a “moderate” influence by the respondents. On a scale of 0 to 10 the average rating given was 6.0. While this is not a direct index of attribution, it does give some indication of the impact of the Program. It has been assumed that the attribution of the benefits assumed to the RMT Program was 60%.

It was not possible to survey other producers who were not recorded on the data base. If this had been done, a more accurate assessment of the number making changes associated with RMT could have been made by the use of such a control. Such a suggestion could be considered for any future program evaluations.

Timing of impacts
Due to the nature of the program and its emphasis on demonstration and training, the capture of benefits is assumed to have been relatively rapid. Benefits are assumed to commence in the year ended June 2007 and rise to a maximum in the year ended June 2011. These maximum benefits are assumed to persist for five years and then gradually decrease to zero over the next ten years as knowledge gained is not re-enforced and new producers do not receive additional training and encouragement (in both the with and without scenarios).

Summary of Assumptions
A summary of the key assumptions made is shown in Table 8.

Table 8: Assumptions for the Valuation of Benefits

Variable	Value	Source
Total number of Beef and Sheep-Beef producers making management changes that result in positive productivity and profit impacts	112	Table 5
Weighted five year average gross cash income for beef and sheep –beef producers	$ 239,101 per annum	Table 6
Weighted five year average gross cash income for beef and sheep –beef producers	$204,500 per annum	Table 6
Increase in average gross farm income from changes	10%	Consultant assumption based on case studies with a reduction to allow for lower impact for non-case study farms
Increase in farm cash costs from changes	5%	Consultant assumption based on case studies.
Attribution of benefits to the RMT Program	60%	Consultant assumption based on rating of RMT Program impact by producers
Year of first benefits (year ending June)	2007	Consultant assumption based on responses in producer survey and case studies
Year of maximum benefits (year ending June)	2015	Consultant assumption

5. Results

All past costs and benefits were expressed in 2009/10 dollar terms using the CPI. All benefits after 2009/10 were expressed also in 2009/10 dollar terms. All costs and benefits were discounted or compounded to 2009/10 using a discount rate of 5%. The discount rate of 5% was selected in line with the guidelines of the standardised evaluation process adopted by the Council of the Rural R&D Corporations (CRRDC). The standard analysis ran for 25 years from the last year of investment (2008/09).

Investment criteria of Net Present Value (NPV), Benefit-Cost Ratio (B/C Ratio) and Internal Rate of Return (IRR) were estimated. The NPV is the difference between the Present Value of Benefits (PVB) and the Present Value of Costs (PVC). Present values are the sum of discounted streams of benefits and/or costs. The B/C Ratio is the ratio of the PVB to the PVC. The IRR is the discount rate that would equate the PVB and the PVC, thus making the NPV zero and the B/C ratio 1:1.

Results are presented for the total investment in the program as well as for MLA alone. The attribution of the total benefits stream to MLA is based on the proportion of total costs over the five years in 2009/10 $ terms that has been contributed by MLA (estimated at 29%). The estimates of the investment criteria are reported in Table 9.

Table 9: Investment Criteria for Investment in RMT Program
(discount rate 5%, 25 year benefit horizon)

Criterion	**Total Investment**	**MLA Investment**
Present value of benefits ($m)	8.66	2.53
Present value of costs ($m)	3.06	0.90
Net present value ($m)	5.60	1.63
Benefit-cost ratio	2.83	2.80
Internal rate of return (%)	27.1	25.7

Sensitivity of the investment criteria to the discount rate used and income change impacts are reported in Tables 10 and 11.

Table 10: Sensitivity of Investment Criteria to the Discount Rate
(Total Investment)

Criterion	**Discount rate**		
	0%	**5% (Base)**	**10%**
Present value of benefits ($m)	10.60	8.66	7.38
Present value of costs ($m)	2.68	3.06	3.48
Net present value ($m)	7.92	5.60	3.90
Benefit-cost ratio	3.97	2.83	2.12

Table 11: Sensitivity of Investment Criteria to Assumption on Gross Income and Cost Increases
(Total Investment, 5% discount rate)

Criterion	**Half Base**	**Base: (10% gross income and 5% costs)**	**Double Base**
Present value of benefits ($m)	4.33	8.66	17.32
Present value of costs ($m)	3.06	3.06	3.06
Net present value ($m)	1.27	5.60	14.27
Benefit-cost ratio	1.42	2.83	5.67
Internal rate of return (%)	11.1	27.1	51.5

Table 10 shows the investment criteria are not particularly sensitive to the discount rate, largely due to the relatively early returns captured by the Program. Table 11 shows that the investment criteria are fairly robust regarding the profit increase. In fact the benefits can be reduced to a 3.5% increase in gross cash income and 1.75% increase in cash costs and the investment will still break even. Likewise, given the current assumption regarding the profit increase, the number of red meat farms benefiting can fall from the 112 assumed to 40 farms and the investment would still break even. The attribution factor to the RMT Program could fall from 60% to 21% and the investment would still have broken even.

6. Comparison with Other Red Meat Associated Analyses

The magnitude of the benefit cost ratio estimated of 2.8 to 1 for the RMT Program lies within the range of other investment analyses completed in the past few years for R&D programs associated with the red meat industries (See Table 12).

Table 12: Comparison with Investment Criteria Produced in the Recent Past from Other Studies

Analysis	Benefit Cost Ratio	Source
Beef Cattle Genetics R&D	3.6	Farquharson et al (2002)
Beef On-Farm Programs – Northern	1.9	CIE (2009)
Beef On-Farm Programs – Southern	3.1	CIE (2009)
On-Farm Programs	3.6	CIE (2008)
Grain and Graze	1.5	Viv Read and Associates (2008)
Northern Beef Communication and Research Adoption	2.6	Agtrans Research (2009)

7. Guidelines for Improvement

Evaluation appears to have been described as a key component of the Program (e.g. mentioned in various Annual Reports of the Program), yet very little data on impacts was collected and little evaluation appears to have been undertaken during the investment. This is a deficiency that needs to be rectified if another such Program is funded in the future.

The reporting of the program results focuses on gross parameter changes in terms of liveweight gain or beef produced per ha. Many of these changes require added costs and these are not reported. For example additional nitrogen, irrigation, fencing to allow rotational grazing and supplementary feeding were presumably required to implement many of the improvements. A greater focus should be given to enterprise and whole farm budgeting. The only document that addresses additional costs is the report by Williams (2008) on 'Applying Known Feed Base Technologies'.

More attention could be given to information on industry structural changes, performance and practices, as well as on financial business performance that can be used for both component evaluation as well as for precipitating an increased rate of change through benchmarking and case studies of successful journeys. Such information could be used also for setting research

priorities and providing entry points to capacity building. In this respect, representative farm modelling could be beneficial in order to cover different rainfall regions and enterprises.

Most important is increased recording, measuring and reporting of the participation, adoption, and nature and impact of management changes precipitated by program activities. For example, a process considered worthwhile would be to follow up on exit survey responses and activity, even if just via a telephone call. This may require acquiring permission at the event.

8. Conclusion

The CBA for the investment in the RMT Program has shown a positive return. The investment has raised awareness of opportunities for improvement and provided greater confidence in those willing to undertake change.

Given the assumptions made, the investment is estimated to have been profitable with a total gross value of benefits of $8.6 million (present value of benefits) for a Program investment of $3 million (present value terms). This produced a net present value of benefits of $5.6 million and a benefit-cost ratio of 2.8 to 1. These estimates are considered conservative since there are some environmental and social benefits in the form of reduced soil and nutrient export and research efficiency and capacity building benefits that have not been valued. Further, the results appear to be quite robust to changes in the key assumptions.

Attribution of the benefits from change to the RMT Program has been difficult to make as there was little information on change that had occurred on farms not involved in the Program. Apart from this, there are some other valuable evaluation activities, especially with regard to follow up on impacts that could be considered in any future red meat Program.

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