

# final report

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## **Farm300: Boosting livestock production efficiency by reducing greenhouse gas emissions from livestock**

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## Executive Summary

In 2013 MLA received a grant from the Australian Government's Extension & Outreach program under the Carbon Farming Futures program, to conduct the project - 'Farm300: Boosting livestock production efficiency by reducing greenhouse gas emissions from livestock'. The project ran from June 2013 to June 2015 and aimed at up-skilling livestock producers and advisors to manage on-farm emissions while improving profitability. The project provided win-win outcomes for farm businesses and the environment.

Australian agriculture contributes approximately 14% to the nation's total greenhouse gas emissions and the majority of those emissions come from methane from livestock. With the current national beef herd at approximately 29.3 million cattle and calves; and 75.5 million sheep and lambs, there is a significant opportunity and profound need to address methane emissions from these enterprises.

The Farm300 project built on significant completed and current research and development investments, to enable producers to build knowledge and skills to adapt and improve management capability in relation to greenhouse gas emissions and increasing productivity.

Critical to this approach has been to foster and maintain a network of deliverers who are equipped to support producers to identify opportunities within their business that will enable:

- production efficiencies to be gained
- adaptation of management practices to specific farming systems
- a subsequent reduction in greenhouse gas emissions
- better understanding of the Emissions Reduction Fund (ERF) processes and opportunities for implementing approved methods to earn carbon credits from either reducing emissions or sequestering carbon

The key activities were:

- Development of a hub on the MLA website, [www.mla.com.au/farm300](http://www.mla.com.au/farm300), containing the key content produced during the project, including 3 video case studies, 12 video clips and 3 online tutorials
- Awareness raising activities in relation to managing on-farm emissions and the link to productivity, and participation in the ERF
- 7 workshops for industry advisors on methods to boost productivity and reduce greenhouse gas emissions
- Training and support for 23 Farm300 coaches on how to effectively coach producers
- Coaching programs for 330 livestock producers on opportunities to reduce greenhouse gas emissions and boost productivity. Programs involved the use of tools and calculators developed by either MLA or project partners, and extension methods such as group discussion activities, presentation by experts and one on one activities.

The major outcomes of the project were that 128 livestock industry advisors are better placed to advise the livestock industry on GHG emissions and opportunities within the ERF for producers, and 330 producers are better placed to manage their farm business to increase profitability and reduce greenhouse gas emissions.

Other industry benefits from the project include:

- Improved access to – and coordination of – information and support services that assist producers to reduce greenhouse gas emissions and improve production efficiency.
- Improved understanding and knowledge of producers and their advisors on effective strategies to mitigate greenhouse gas emissions without compromising productivity and profit.
- Effective platforms that will continue to support improved advisor – producer relationships leading to increased adoption of best practices.
- Demonstration of industry commitment and professionalism to mitigating and reducing greenhouse emissions from livestock.

Producer benefits:

- Improved production efficiency and profitability of medium to large cattle and sheep producers.
- Increased knowledge, skills and confidence to manage and deal with greenhouse gas mitigation strategies.

Public benefits:

- A more competitive and robust industry contributing to the overall Australian economy.
- A more sustainable industry that contributes to caring for the environment.
- Improved service delivery and increase in intellectual capital within rural and regional communities.

## Acknowledgements

Establishment of the Farm300 project would not have been possible without the support from the partners - Australian Farm Institute, Dairy Australia and Australian Wool Innovation. These organisations committed significant in-kind resources to assist in delivering the project.

Meat & Livestock Australia acknowledges the significant commitment to deliver the Farm300 project by the National Coordinator team from Macquarie Franklin, mainly Basil Doonan and Leanne Sherriff. Their commitment to delivering significant outcomes for industry from the project and their dedication to deliver under tight timelines was commendable.

Strong commitment to delivering significant outcomes through Farm300 was demonstrated by the 23 coaches: Garry Armstrong, Paul Wallace, Andrew Whale, David Rendell, Melissa Rebbeck, Tim Prance, Anthea Ferguson, Jason Lynch, Maria & Callen Thompson, James Whale, John Marriott, Thakur Bhattarai, Richard Brake, David Brown, John Francis, Mark Gardner, Kristy Howard, San Jolly, Graham Lean, Paul Omodei, Ed Riggall and Ben Watts. MLA acknowledges the challenges and time constraints the coaches worked under to complete the coaching programs on time and we acknowledge the significant efforts of coaches which contributed to the success of the coaching program.

Thank you to the more than 330 producers who engaged in the project and made the commitment over 6-8 months to participate in the coaching program and to increase their skills and awareness of GHG emissions management.

The Farm300 Steering Committee was integral to the project's success, providing guidance and support to the project team throughout the term of the project. Thank you to Dr Beverley Henry, Dr Richard Eckard, Adam Tomlinson, Catherine Phelps, Taran Blyth, Gus Manatsa and Dr Tom Davison for the multitude of valuable insights and guidance.

Thank you also to the National Livestock Methane Program team for their valuable technical scientific contributions to the project. In particular, Dr Tom Davison, Marine Empson, Dr John Black, Dr Julian Hill, Phil Cohn and Andrew Sedger.

Further, thank you to the team behind the Australian Government funded project "Project2020" for the collaboration on the advisor workshops, in particular Andrew Thompson, John Young, Jason Trompf and Graeme Anderson.

Finally, thank you to the Department of Agriculture for giving MLA the opportunity to deliver Farm300 and with it achieve significant outcomes for the red meat and livestock industries.

## Table of Contents

1	Background.....	6
2	Projective Objectives .....	6
3	Methodology .....	6
3.1	Process and administration.....	6
3.2	On-ground extension.....	7
3.2.1	Upskilling advisors .....	7
3.2.2	Upskilling producers (the coaching programs).....	8
3.3	Communication materials and activities .....	10
4	Results .....	10
4.1	Achievements against project objectives.....	10
4.2	On-ground extension.....	12
4.2.1	Upskilling advisors .....	12
4.2.2	Upskilling producers (the coaching programs).....	13
4.3	Communication materials and activities .....	15
4.3.1	Awareness and access to information:.....	15
5	Discussion .....	17
5.1	Highlights of the Project .....	17
5.2	Key findings of the project.....	17
5.3	Lessons learned from the Project .....	18
5.4	Challenges for the Project.....	18
6	Conclusions/Recommendations.....	19
6.1	MLAs strategy to continue to deliver Farm300 principles and activities .....	20
7	Key Messages .....	20
8	References .....	21
9	Appendix.....	21
9.1	List of appendices: .....	21

# 1 Background

Farm300 was a two year project initiated and run by MLA, funded by the Australian Government and delivered in partnership with the Australian Farm Institute, Australian Wool Innovation and Dairy Australia. The project commenced in late 2013 and concluded in May 2015.

The primary objective of Farm300 was to improve the knowledge and skills of Australian cattle and sheep producers to provide them with an opportunity to increase on-farm productivity and profitability by 10%, and decrease greenhouse gas emissions by 30%. It aimed to achieve this objective by offering producers the opportunity to participate in a supported learning program (including a coaching component) with experienced advisors.

Farm300 intended to provide an integrated, coordinated and collaborative platform for achieving effective on-farm practice change. Critical to this approach was to engage a network of deliverers equipped to support producers to identify opportunities within their business that would enable production efficiencies to be gained, adaptation of management practices and a subsequent reduction in greenhouse gas emissions. The project also provided producers with a better understanding of the Emissions Reduction Fund and opportunities for implementing approved methodologies.

## 2 Projective Objectives

The objectives of Farm300 were:

1. At least 65 percent of livestock medium to large cattle and sheep producers will be aware of, and have accessed, information and tools on land sector greenhouse gas emissions management and the ERF.
2. At least 100 advisors trained in the latest information on land sector greenhouse gas emissions management and the ERF.
3. At least 300 medium to large cattle and sheep producers completed the full coaching and skills development program which provided opportunities to achieve a 10 per cent productivity gain and a 30 per cent reduction in greenhouse gas emissions.
4. The FARM300 project will be effectively and efficiently managed, coordinated and reported on.
5. The FARM300 project will be effectively and efficiently evaluated.

## 3 Methodology

### 3.1 Process and administration

A National Coordinator team was appointed by MLA to assist in the delivery and project management of Farm300. The project team included key staff from MLA (such as adoption managers and communications staff), and key contributors to the project from the National Coordinator team.

A Farm300 Project workplan was developed by MLA in collaboration with the National Coordinator – this was required to be submitted to the Department of Agriculture for approval using a template developed by them. A separate, more detailed gant-chart workplan was

developed by the National Coordinator. This workplan identified individuals responsible for delivery of key actions and timeframes for completion. It also included a stakeholder register to ensure effective communications with all stakeholders relevant to the project, and a detailed risk assessment. The workplan, stakeholder register and risk assessment were reviewed regularly at monthly project team meetings.

A detailed Monitoring and Evaluation (M&E) Plan was developed for the Farm300 project to enable continuous improvement in project delivery and also to ensure that the project performance against objectives and overall industry impact could be calculated. The M&E plan is attached as an Appendix 1.

The Steering Committee was formed by MLA, with meetings held twice a year. There were also two additional meetings of sub-committees – one to assist with the development of the criteria for coaches and coaching programs and the other to select the successful Farm300 coaches from the advisor applications received. Between them the members of the Steering Committee had significant expertise in the area of greenhouse gas emissions and were able to provide the project team with very valuable support and guidance.

The key role of the National Coordinator was to manage communications with coaches and support delivery of the coaching program. Detail of this support is provided in Section 3.2.2.

## **3.2 On-ground extension**

The Farm300 project consisted of two key extension phases, which enabled both livestock advisors and producers to engage with the program and have the opportunity to develop greater awareness of the ERF and its relevance to sheep and beef production systems. A key focus of Farm300 was to build practical knowledge and skills to increase on-farm productivity and reduce greenhouse gas emissions intensity.

### **3.2.1 Upskilling advisors**

Farm300 partnered with a separate project, Project 2020 (More Lambs More Often), also funded through the Australian Government, to deliver 7 workshops for industry advisors across Australia from April to June 2014. The purpose of these workshops was to:

- increase awareness of the Emissions Reduction Fund (ERF) and its relevance to sheep and beef production;
- review the opportunities for increased on-farm productivity and reduced greenhouse gas emissions intensity; and
- invite advisors to apply for paid positions as coaches for groups of producers.

Workshops were held at the locations and dates outlined in Table 1.

**Table 1. Dates for advisor training workshops held in different locations across Australia. The number of participants is shown in brackets.**

<b>Workshop location</b>	<b>Day 1</b>
1. Launceston, TAS	20 <sup>th</sup> May (15)
2. Hamilton, VIC	22 <sup>nd</sup> May (23)
3. Adelaide, SA	26 <sup>th</sup> May (18)
4. Perth, WA	28 <sup>th</sup> May (22)
5. Tamworth, NSW	3 <sup>rd</sup> June (17)
6. Wagga Wagga, NSW	5 <sup>th</sup> June (25)
7. Rockhampton, QLD	10 <sup>th</sup> June (8)
<b>Total</b>	<b>128</b>

### 3.2.2 Upskilling producers (the coaching programs)

The objectives of Farm300, to provide opportunities for livestock producers to lift livestock business profitability and reduce greenhouse gas emissions, required practice change to be achieved by participating producers. Research has demonstrated that the most effective way to achieve practice change is through skill development and an increase in confidence and understanding to enable incorporation of new information and skills into business management. Hence a coaching methodology was used to deliver to participating producers.

The coaching programs were required to meet the following criteria:

- Run current and future GHG and profit scenarios for the average of the group or an average or typical farm in their proposed group to enable a comparison between current performance and predicted performance (based on anticipated outcomes from program participation). To be eligible, the outcomes must result in a significant movement towards the project objectives of a 10% profitability gain and a 30% reduction in GHG emissions intensity.
- Programs must have a profitability and GHG focus.
- The proposed program must include a theoretical component (with scientific merit) relevant to course materials.
- Courses which are already being subsidised through other sources were not eligible. The proposed program could bolt on to an existing program or group's activities to increase adoption of principles (which leads to management changes) through enhanced skills.
- Compulsory content provided for the introductory workshop which must be delivered at the beginning of the coaching program (content focussed very strongly on the ERF and the outcomes of the National Livestock Methane Program).
- The program must fulfil the definition of coaching: defined as advisors providing a supported learning environment over a series of sessions to enable producers to develop skills in order to make changes to their management and/or practices which will result in business improvements.



While the advisors are expected to be technical experts on the topic and to provide supporting technical information, they should not give answers or specific technical management advice, but facilitate discussion that enables participants to find their own solutions using improved skills to capitalise on proven principles

Coaching programs for producer groups commenced in late 2014, once coaches had recruited producers for their groups, and developed their individual coaching programs and supporting materials. Programs involved the delivery of 6-8 coaching sessions, over a 6-8 month period, with group size varying from 6-18. Because they were individually tailored by coaches the programs all covered regionally relevant material, to support and enable producers to build the skills required to make on-farm changes, which lead to productivity gains and greenhouse gas emissions reductions.

Coaching support packages were provided to the advisors recruited for coaching positions, to assist them in developing and delivering their programs. The support package included a skills audit template, coaching program template, session feedback forms, GHG calculator data entry sheets (for FarmGAS, SGAF and BGAF), coaching roles and responsibilities, an example running sheet for a coaching session, and a session plan template for the introductory workshop. Additionally coaches were provided with electronic copies of materials and presentations delivered by expert presenters at the advisor training workshops, and materials and factsheet produced by other programs (e.g. WFSAM, NLMP).

Coaches were provided with a number of other support mechanisms during the delivery of the Farm300 project. Regular email updates on issues relevant to the Farm300 program delivery were provided by the National Coordinator. These were distributed on an as-needs basis. Three webinars for coaches were delivered between July 2014 and February 2015 – these covered a range of topics including support for developing coaching programs and M&E materials, to more technical subjects such as greenhouse gas calculators and ERF methodologies and the latest livestock methane research. The webinars were recorded and made available to coaches unable to attend. A coaches' internet forum was also established, where relevant documents and links could be uploaded for coaches, and also to provide a forum for coaches to communicate with each other.

Significant one-on-one support was provided to all coaches in the development of their coaching programs and in assisting them to learn to use the on-farm greenhouse gas calculators. This support was provided on an as-needs basis, and where required the National Coordinator was able to source additional support and information for coaches from technical experts.

A coach tracking sheet was established by the National Coordinator to enable the delivery of coaching programs and submission of M&E data to be tracked. Regular phone and email contact was maintained with individual coaches to ensure that delivery of programs was running to schedule and that submission of M&E data was done in a timely manner.

### 3.3 Communication materials and activities

One of the project objectives was to set up a communication platform to underpin the extension and awareness raising activities of the project. A number of activities were rolled out including: development of a communication plan; development of a new online hub on MLAs website for environmental and emissions management; awareness raising through MLAs member communication channels, partner communication channels and broader media; video case studies of MLA funded climate champions to help promote opportunities of the project to livestock producers; production of fact sheets and 'tips and tools'; online video tutorials for use of some of MLAs online tools and calculators; conversion of the 'Towards Sustainable Grazing' and the 'Grazing Land Management' manuals to online content and integration into the environmental management hub on MLAs website; video tracking of 6 producers participating in the project showcasing their progress and results to other livestock producers; and a final open webinar to showcase project results to the broader livestock industry.

## 4 Results

### 4.1 Achievements against project objectives

Farm300 successfully delivered and met all Objectives and KPIs (the final report was approved by the Australian Government in July 2015). The project management methodology and tools employed were successful in enabling program delivery to be achieved. Key results from each of the components of the project are provided below.

#### 1. At least 65 percent of livestock medium to large cattle and sheep producers will be aware of, and have accessed, information and tools on land sector greenhouse gas emissions management and the ERF.

This objective was completely achieved. Summary of activities:

- Online platform
- Online grazing manual
- 3 Climate champion case studies
- 3 Video tutorials
- 12 Video clips on Farm300 producers
- Fact sheets
- Communications plan
- Media – MLA member channels, partner channels and 3<sup>rd</sup> party channels
- Social Media
- Webinars
- Use of MLA tools and calculators

#### Measures

- Half of MLA members are aware of ERF/CFI and those who have visited the website are more informed
- [www.mla.com.au/farm300](http://www.mla.com.au/farm300)
- Website views /Farm300: 3,005
- Twitter [#Farm300](https://twitter.com/Farm300)
- Producer Videos: 250-600 views

- Tutorials: 250 (FDC), 650 (Variability), 880 (sustainability) views
- MLA Feedback Magazine and email newsletter (76% of MLA members claim that information in Feedback Magazine influences their decision making)
- Other media: AFI newsletter, AWI Beyond the Bale, Tasmanian Farmer, the Land – plus interest from global media
- Webinars completed: 4

**2. At least 100 advisors trained in the latest information on land sector greenhouse gas emissions management and the ERF.**

This objective was exceeded (128 advisors were trained). Summary of activities:

- Workshop handbook
- 7 workshops
- Overview of GHG calculators fact sheet/tool
- Training of coaches

**3. At least 300 medium to large cattle and sheep producers completed the full coaching and skills development program which provided opportunities to achieve a 10 percent productivity gain and a 30 percent reduction in greenhouse gas emissions.**

This objective was achieved. 330 medium to large sized producers participated in the program and achieved, on average a 24% increase in profit, 7% reduction in net emissions and 19% reduction in emissions intensity. More details can be found in the discussion section below. Main activities were

- Introductory workshops
- Establishment of groups
- Coaching tool kit
- Training of coaches
- Estimates of productivity and GHG impacts (pre and post program)

**Measures**

- Number of introductory workshops 21
- Number of producers attending 324
- Number of coaches 23
- Number of groups established 20
- Number of medium to large producers completing the coaching program 330
- Producers motivated and engaged (from feedback)
- Coaching program applications with estimates of productivity and GHG impacts (pre and post program)

**4. The FARM300 project will be effectively and efficiently managed, coordinated and reported on.**

This objective was achieved. Main activities:

- National coordinator engaged

- Detailed work plan developed
- Steering committee established
- TOR developed for Steering Committee
- Steering committee meets 2 times per year
- Cross RDC collaboration on Steering Committee
- Milestone reports to the Department of Agriculture

#### Measures

- Milestone reports from coordinator
- Number of steering committee meetings
- Minutes from Steering Committee meetings
- Engagement of SC members
- Milestones are achieved and Commonwealth pays MLA

### **5. The FARM300 project will be effectively and efficiently evaluated.**

This objective was achieved. Main activities

- M&E framework developed and implemented
- Approval achieved from the Department of Agriculture

#### Measures

- Continuous improvements
- Final M&E report prepared

## **4.2 On-ground extension**

### **4.2.1 Upskilling advisors**

A total of 128 advisors from across the country attended the advisor training workshops. A complete copy of the advisor workshop M&E report is provided in Appendix 2.

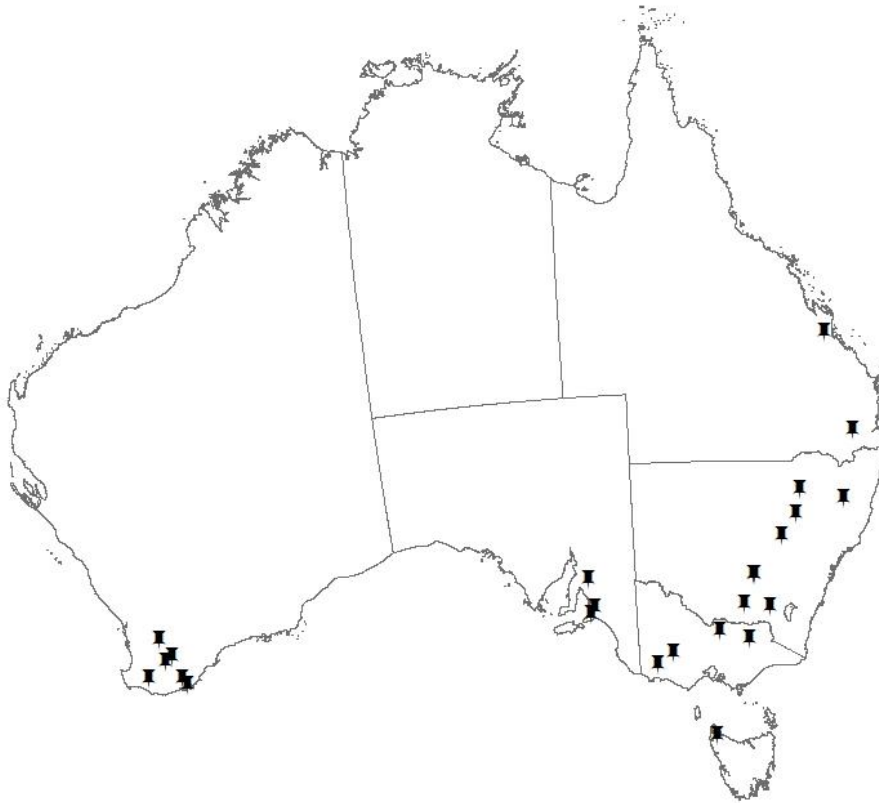
Feedback from advisors who attended provided positive endorsement for the workshops. More than 90% of participants indicated that the format of the workshops worked well and 97% rated the content as valuable or very valuable. The KPIs for both the Farm300 and Project 2020 projects relating to providing training and subsequent engagement of advisors to the beef and sheep industries were achieved by this joint training initiative.

There were also changes in the level of understanding of the key topics covered at the workshop. This indicated that regardless of the relevance of the material being presented and whether it would be subsequently delivered to their clients, the workshop presenters did an excellent job at improving advisors' knowledge and awareness of current and future opportunities to reduce the emissions of greenhouse emissions, raise their awareness of the ERF and improve their capacity to cope with variable climatic conditions. After the workshops more than 50% of advisors believed there were a number of opportunities for livestock producers to effectively reduce emissions. By contrast, only 10% thought there were a number of opportunities for producers to participate in the ERF, however this result

was not surprising given a lack of approved methodologies that would not compromise productivity available at the time.

#### 4.2.2 Upskilling producers (the coaching programs)

Twenty three coaches were contracted to deliver the Farm300 program to 330 producers, from regions spread across Australia (Queensland, NSW, Victoria, SA, Tasmania and WA) (Figure 1). The outcomes from the coaching program are described in detail in the Farm300 Monitoring and Evaluation Report which is attached as an Appendix 3. Key results are outlined below.



**Figure 1: Location of Farm300 coaching groups**

The average increase in profit predicted to occur based on participation in the Farm300 programs was 24% (target of the program was 10%). The average impact of the program on net emissions was a reduction of 7%, while emissions intensity was reduced by 19% (target 30%). These results are consistent with the WFSAM studies (Eckard et al 2015), which highlighted the limited opportunities for livestock producers to decrease net emissions, while lifting profit. However, there are many opportunities to increase productivity and profit, and decrease emissions intensity.

**Table 2: Summary of total project impact**

Total hectares impacted	<b>454,078</b>
Total head of cattle	<b>59,939</b>
Total head of sheep	<b>540,845</b>
Total number of beef businesses	<b>175</b>
Total number of sheep meat businesses	<b>178</b>
<b>Total number of participants</b>	<b>330</b>
Average hectare per business	<b>1,582</b>
Average head of cattle per business	<b>343<sup>1</sup></b>
Average head of sheep per business	<b>3,038</b>

For producers directly involved in the project, nearly 60,000 cattle, 540,000 sheep and approximately 450,000 hectares were covered. The impact of the project in Queensland was potentially limited, but because of extended drought the region was not actively targeted.

The average for the GHG/ERF skills audit was 39% pre-coaching which increased to an average of 82% post-coaching. The average coaching program skills audit result was 43% pre-coaching and this also increased to 82% post-coaching. These significant improvements in skills and knowledge are consistent with data from MLA's Majority Market Programs.

The total amount of CO<sub>2</sub>e expected to be abated from the producers who participated in the program is 31,000t (average of 1,740t/producer) – based on the current carbon price of \$13.95 per tCO<sub>2</sub>e this equates to a potential financial benefit of \$437,000 (average of \$24,000 per producer) that could be accrued were producers to participate in the ERF. This compares with a total increase in profit of \$14 million (average of \$779,000 per producer). These findings are consistent with results from the WFSAM studies (and with the net-present value data), and reinforce the importance of the link with profit in encouraging livestock producers to engage in practices to reduce their emissions (Eckard et al 2015).

A majority (79%) of participants either intend to or have already made changes as a result of participating in Farm300. This clearly demonstrates the effectiveness of the coaching model to upskill and empower producers to make changes on-farm. The majority of the practice changes being adopted included aspects of pasture/grazing management and animal management (e.g. genetics, lifting reproductive performance).

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<sup>1</sup> Primarily consists of Southern producers. Refer to definition of medium to large producers.

### 4.3 Communication materials and activities

Medium to large producers was the target market for Farm300 to optimise the reach of the project across cattle and sheep enterprises. ABARES defines scale of farms as outlined below:

Beef cattle herd group, by number of head (herd size)	Northern Australia	Southern Australia
Small	100–400	100–200
Medium	400–1 600	200–400
Large	1 600–5 400	400–800
Very large	>5 400	>800

Source: Financial performance of Beef Farms 2011-12 to 2013-14; <http://www.mla.com.au/Prices-and-markets/Trends-and-analysis>

*For the purpose of farm performance analysis, ABARES classifies slaughter lamb producers according to average slaughter lamb production scale over the past three years (2010–11 to 2012–13).*

- Small-scale farms—200 to 500 lambs sold for slaughter a year
- Medium-scale farms—500 to 1000 lambs sold for slaughter a year
- Large-scale farms—1000 to 2000 lambs sold for slaughter a year
- Very large-scale farms—more than 2000 lambs sold for slaughter a year.

Source: Financial performance of slaughter lamb producing farms 2011-12 to 2013-14: <http://www.mla.com.au/Prices-and-markets/Trends-and-analysis>

Data collection from Farm300 producers demonstrates that the project predominately engaged medium to large livestock producers. MLA has 49,704 cattle and sheep and goat producer members on the company database which was used to distribute and promote communication materials where relevant. We can assume that most medium to large cattle and sheep producers are members of MLA (as the database represents approximately 82% of production), and as such there has been significant exposure of the project to a large proportion of the industry.

#### 4.3.1 Awareness and access to information:

MLAs Feedback Magazine is sent out to more than 49,700 producers and industry stakeholders. MLA research has demonstrated that Feedback Magazine is the key influencing media for livestock producers. It is considered a great tool for reaching MLA's audience, with 76% of members claiming that the publication has an influence on decision making within their farm business (MLA Membership Survey 2014). Feedback magazine has included a large number of articles on the Farm300 project over the last 12 months. We can therefore assume that the majority of MLAs members have accessed information on managing on-farm emissions and new opportunities in the Emissions Reductions Fund/Carbon Farming Initiative.

The 2014 MLA membership survey also showed that just over 50% of MLA members regularly visit MLAs website and find the information useful. In addition, the membership survey established that 51% of MLA members are aware of the Carbon Farming Initiative.

For the purposes of measuring some of the the Farm300 objectives, MLA engaged an independent, professional evaluation company. Questions on Farm300 were added into the

broader industry quarterly AgScan survey in April 2014 to obtain baseline information and again in March 2015 to run the final evaluation.

The Agscan surveys conducted in April 2014 and March 2015 showed only a slight increase in awareness of livestock producers of the CFI. Given the change from the CFI to the ERF during this period, it is assumed that this seriously impacted on the awareness KPI and ability for it to be achieved.

The AgScan survey showed an average increase in awareness of CFI from 51% to 55% in the 12 months between the surveys. Sheep and beef specialists in general align with this result, but 64% of mixed grain and livestock were found to be aware in 2015. A large part of the southern Farm300 producer participants have indicated running mixed grain/livestock enterprises. The grain industry has made a significant effort in raising awareness on carbon emissions and the opportunities for farmers, which is likely to have influenced the result. There has been a significant increase in awareness in WA from 49% to 72%, which could mean an increased awareness across the sheep-wheat belt in southern WA, where Farm300 has had a number of groups working. Generally larger size farms and higher income farms are now more aware of the CFI.

Through the AgScan survey MLA also measured producers' awareness of the opportunities to manage greenhouse gas on farm while improving productivity. Around 30% of producers were found to be aware of opportunities. The specific results for beef and sheep specialist indicate there has been a 5-6% increase, whereas mixed beef and sheep enterprises has had a 12% reduction in awareness<sup>2</sup>.

An additional question was added to the 2015 survey, asking about intention to change practices on farm. The overall result demonstrated that 29% of producers are planning to - or have already - made a change on-farm in relation to emissions management and productivity. This demonstrates that the Farm300 project has set up an effective change management platform for engaging the livestock industry in emissions management.

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<sup>2</sup> According to K2G conducting AgScan, this is likely to be a methodology issue, e.g. an issue of too few respondents in an area.



## **5 Discussion**

### **5.1 Highlights of the Project**

The following discussion includes inputs from both the project delivery team (MLA and Macquarie Franklin) and the Farm300 coaches. While the project delivered against the KPIs, there have also been a number of unintended benefits and learnings derived as a result of the Farm300 project.

For the project delivery team, some of the key highlights from Farm300 have been the very successful collaboration with Rural Industry Skills Training (RIST) in delivering the advisor training workshops, and the contributions from some of the best technical experts in this field as presenters for the days. The high attendance at the advisor workshops was exceptional and also the really positive feedback and the significant learnings of advisors at these events (see advisor workshop evaluation in Appendix 2).

Another highlight was the partnership with Rabobank and Phil Cohn to produce the sustainability video. In general, the opportunity to develop other videos and tools and to update existing resources, and the exposure of producers to MLA tools such as feed demand calculator, rainfall to pasture outlook tool, cost of production calculator is seen as a key benefit.

Further, the engagement and commitment of coaches and producers to the project was a highlight that enabled the project objectives to be achieved despite some major challenges. The high level of team work and commitment from the delivery team which kept on-task and focussed also contributed to this as did the contributions of our steering committee with cross-RDC collaboration and participation of highly respected and knowledgeable individuals in the area of GHG and climate change.

Finally, linking extension with R&D happening in the livestock emissions area was a highlight. Given MLA's large investment in the National Livestock Methane Program, the links created between the NLMP project team and Farm300 enabled research messages to reach a broader audience.

Finally the strong and positive feedback about the project from both coaches and producers was a major achievement.

### **5.2 Key findings of the project**

The project has demonstrated the benefits of using the coaching methodology, which has played a key role in meeting project objectives. This has reinforced to MLA the need to consider adopting the coaching model more widely in our extensions programs. However, the project has also shown a strong need for training of advisors to enable them to deliver skills development programs and act as coaches. The key here is the difference between telling and showing, and in order to improve producer's skills it is important that they learn how to do something, but make the decision and do the implementation themselves, although in a supported environment

Another key finding was the link between emissions management and productivity. Positive feedback from producers and coaches shows there is more to be done in this space to

exploit this win/win opportunity. Related to this was the reinforcement of the link between productivity and emissions intensity vs net emissions. The linkage between profit and EI is very strong in livestock production and the majority of practices that will improve efficiency and profit will also improve emissions intensity. This was a critical message in creating producer interest and engagement in the project.

Another finding was the importance of discussion and group input in achieving buy-in from an audience: i.e. the opportunity for contribution is highly valued and will engage an audience more effectively than simply “talking at them”.

GHG tools and calculators bring frustrations and have some limitations. They need to be regularly updated to take into account new methods, calculations and also they should include the option for calculating emissions intensity.

There is a large need in the farming community for more support and information around managing climate variability. The climate in livestock production areas around Australia is increasingly variable and the majority of producers do not have the skills to be able to manage this effectively.

### **5.3 Lessons learned from the Project**

The Farm300 project has been an inspiring journey for MLA and has enabled the organisation to experiment with an effective extension model, coaching, which would normally be too costly to implement at large scale. From this experience, MLA notes a number of lessons learned.

It is important to find the right “hook” to engage your audience. For Farm300 this hook has been the link between productivity and greenhouse gas emissions – and emissions intensity. Without this hook Farm300 would not have engaged producers as effectively as it did and would not have been able to achieve its objectives.

It is important to be able to build flexibility into program delivery so that outcomes can still be achieved despite some adaptation of the approach (for example drought, bushfire and cyclone all impacted some of the coaching groups and had they not been able to adjust delivery, their programs would have failed).

Information needs to be provided in such a way that it is comprehensive, but succinct. It is important not to provide too much information at one time or the key messages get lost. At the same time there needs to be ample time for producers to test their new skills. Hence a fine balance between learning and implementing must exist.

Collaboration, partnerships and working with good people with the right expertise is critical to the successful delivery of a project. And excellent team work and communication is also essential for effective delivery.

### **5.4 Challenges for the Project**

Despite the success of the Farm300 project, rigid timeframes combined with limited flexibility created major challenges for delivery of the project.

Initially there was a time delay in the project being contracted and commencing activities. As the significant time required for contracting the project (including approval of the first work plan) was not included in the original project plan, and the request to extend the completion date due to the protracted contracting process was rejected, the delivery time remaining for the project was highly constrained.

The 8 months of delivery time for Farm300 coincided with the main cropping season in southern Australia and the Christmas period. This created a significant challenge for coaches to deliver workshops during a period where producers are particularly busy. The timeframe also created challenges by not enabling the coaching to be delivered over a complete production cycle (year) – this impacted on the content of some programs (e.g. feed budgeting and pasture assessment). Additionally, some of the changes producers committed to during the project can't be followed up by the group to gain a full appreciation of the impacts (e.g. time of calving, scanning ewes, etc).

Encouraging attendance was challenging for some coaches. Some linked this challenge to the timeframe of the project delivery which ran over Christmas and main harvesting period in southern Australia, while others linked it to payment (i.e. the lack of producer contribution, meaning “no skin in the game”).

GHG calculators created some frustrations for coaches and there was significant time invested into learning to use these tools by coaches. Additionally there is currently no industry standard for calculation of Emissions Intensity for sheep and beef producers.

The initial lack of relevant ERF (and CFI) methods for livestock producers meant that it was very difficult to engage producers' interest in the ERF/CFI. Further, the changes in government and policy (eg. change from CFI to ERF) created challenges in messaging that were disruptive to the project delivery.

## **6 Conclusions/Recommendations**

Despite some significant challenges, the Farm300 program successfully delivered against all objectives and KPIs. The successful delivery of the Farm300 project highlights the importance of implementing rigorous project management techniques, such as workplans and risk assessments, and having effective communications at all levels of a project. Additionally, such a large-scale project with tight timelines benefitted from a multi-person National Coordinator team, where tasks could be delegated as appropriate.

While Farm300 has met its targets on building awareness and skills, there is a continued need for information and skills to be delivered and developed in the livestock industry.

The key components of Farm300 were to:

- Build general awareness of the opportunities for livestock producers to manage on-farm emissions and improving productivity
- Upskill advisors
- Upskill producers

Given the introduction of the Emissions Reduction Fund and the recently approved methods for livestock producers to participate in the ERF as well as the list of methods in the pipeline

and/or under approval – there is a need to continue to provide support to livestock producers post the Farm300 project.

MLA asked the Farm300 coaches if they saw a future need for extension in the area of emissions management and productivity improvement, and also what they thought MLA should invest in. In summary the responses found:

- Many groups want to continue. Producers have only just started understanding the links between carbon management and productivity and want to continue learning
- The one to one sessions in the coaching model was partly what motivated producers to stay engaged and to take action on farm
- No financial commitment from producers means less incentive for producers to show up. Any continued coaching would have to be partly based on user pays. Coaches expected that they could charge producers 40-50% of the total cost and they would expect MLA to fund the rest
- MLA needs to provide continued updates and information and decision-support material. This should include explanations of the benefits of ERF to livestock producers and discussing how different methods would apply on different farms and production systems
- MLA should fund free pilot producer workshops to gain interest and showcase the benefits of the course / marketing. This would encourage producers to participate in coaching programs, which would then be user pays funded
- MLA should fund more advisor training, keeping advisors up to date with outcomes from research and other new opportunities
- MLA should provide ongoing support in online tools to model GHG outcomes/impacts
- MLA should provide links to practical demonstrations and links with existing extension platform such as Making More from Sheep and More Beef from Pastures.

## **6.1 MLAs strategy to continue to deliver Farm300 principles and activities**

MLA acknowledges the continued need for information to producers on ERF opportunities and opportunities to manage carbon and increase productivity on farm.

MLA plans to integrate messaging on carbon emissions and on-farm productivity into mainstream extension platforms in a way not dissimilar to what Dairy Australia has done via their E&O project 'Dairying in a Carbon Constrained World'. MLAs existing extension platforms for the majority market, Making More From Sheep and More Beef From Pastures, are coming to an end of their funding agreements – and a new model is under development in MLA. This will enable integration of Farm300 delivery into mainstream extension from MLA going forward. The development of a new MLA extension platform is expected to run its course over the next 12 months, after which new programs will be launched.

## **7 Key Messages**

- Coaching is an effective adoption model to achieve practice change with livestock producers ( a majority of Farm300 producer participants either intend to or have already made changes as a result of participating in Farm300).

- Upskilling and supporting livestock industry advisors is an effective way of extending messages to the broader livestock industry and of increasing capacity within the industry.
- There are a number of opportunities for livestock producers to effectively reduce emissions ranging from current known best practice (e.g. lifting reproductive efficiency) through to novel techniques developed via research (e.g. feed additives)
- There is a strong link between productivity and emissions intensity in livestock production - the majority of practices that improve production efficiency and profit will also improve emissions intensity.
- The average increase in profit predicted to occur based on participation in the Farm300 program was 24%.
- The average impact of the Farm300 program on net emissions was a reduction of 7%, while emissions intensity was reduced by 19%.
- The total amount of CO<sub>2</sub>e expected to be abated from the producers who participated in the program is 31,000t (average of 1,740t/producer).

## 8 References

Eckard R.J., Christie K., Cullen B., Doran-Browne N., Harrison M., Ho C., Rawnsley R., Sinnett A., Taylor C. (2015). Whole farm systems analysis of greenhouse gas abatement options for the southern Australian grazing industries (WFSAM). Final Report. Department of Agriculture, GPO Box 858, Canberra City ACT 2601, Australia. p. 205

## 9 Appendix

### 9.1 List of appendices:

1. Farm300 Monitoring & Evaluation Plan
2. Advisor workshop evaluation report
3. Final M&E report