final report

Evaluation Process for MLA On-Farm Research and Development

Triple Bottom Line Evaluations
Volume 2: Standardised approaches

Abbreviations used in this report

ABARE   Australian Bureau of Agricultural and Resource Economics
ABS   Australian Bureau of Statistics
BCA   Benefit Cost Analysis
BCR   Benefit Cost Ratio
FCI   Farm Cash Income
LSM   Lamb and Sheepmeat
M&E   Monitoring and Evaluation
MLA   Meat and Livestock Australia
NLWRA   National Land and Water Resources Audit
NPV   Net Present Value
NPVI   Net Present Value per dollar Invested
PI   Performance Indicator
PIRD   Producer Initiated Research and Development
R&D   Research and Development
RDC   Research and Development Corporations
SB   Southern Beef
SGS   Sustainable Grazing Systems
SMEQ   Sheep Meat Eating Quality
TBL   Triple Bottom Line

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1.   Introduction

Hassall & Associates has been engaged by Meat and Livestock Australia (MLA) to conduct Triple Bottom Line (TBL) evaluations of two programs (*Volume 1*) and to develop standardised approaches for conducting future TBL evaluations (*Volume 2*).

This document outlines how MLA can incorporate Triple Bottom Line (TBL) thinking and measures into project development, evaluation and management. It provides:

- Background to TBL evaluations and their complexity;
- An outline of the basic steps involved;
- Consideration of present MLA program objectives according to TBL; and
- An overarching framework that allows choice of relevant performance indicators and methods of collecting necessary data.

1.1   Complexity of measuring TBL outcomes

Industry and government stakeholders have an increasing expectation for Research and Development Corporations to demonstrate the outcomes from their investment. These outcomes include all aspects of the Triple Bottom Line (financial, social and environmental). The expectation is derived from the growing realisation that environmental sustainability and people issues are as important as financial issues in assessing the impacts and returns from investment in R&D. All types of outcomes are needed to enable industry to address its current issues and to better position it for the future.

The main kinds of outcomes from R&D investment are:

- Financial: improved profitability of farms and the industry, more adoption or faster adoption of practices that can improve financial performance;
- Social: increased human and social capital; and
- Environmental: biophysical changes (soil, air, water, biodiversity, landscape), changed practices that can lead to environmental improvement.

Measuring TBL outcomes is difficult and complex. The old adage is true "if it were easy then it would have been done by now". There are very few examples of successful TBL evaluations that can act as a model for how future evaluations can be conducted.

The complexity arises from several sources:

- Long time frames and lags for the R&D benefits to be realised and adopted;

- Presence of intangibles (e.g. flow on effects, motivations) that are difficult to identify, let alone describe or assess;

- Complexity of supply chain considerations and multiple players;

- Programs not being set up to identify intended financial, social and environmental outcomes and assess the performance of each;

- Data not being available to assess either the baseline or achievements. This is a direct consequence of the programs not being set up for it. The baseline can be difficult to measure and it also is not static – it represents what would have been the situation without intervention;

- Difficulty of assigning causality and attribution. Did the R&D investment lead to a certain achievement, or was it due to other factors, such as seasonal and market conditions, or other investment by industry and government stakeholders? There are often many reasons for change; and

- Lack of consistency in previous evaluations - different methods and reporting being used.

This standardised approach aims to address these issues, where possible, especially through better definition of outcomes and monitoring protocols.

2.   Essential steps

The steps that need to be carried out within a TBL evaluation are presented below. They encompass planning, doing and reporting on evaluations. A pre-planning stage is needed to ensure the operating structure is sound and that it is feasible to even consider conducting a TBL evaluation.

A)   Pre-planning (being ready for a TBL evaluation)

- Define program objectives that relate to financial, social and environmental elements. This is a necessary step to ensuring that a TBL evaluation can actually be conducted.

- Align objectives up (to higher levels of management, e.g. MLA portfolio and corporate levels) and down (to project objective level). Alignment of objectives must meet reporting (accountability to different stakeholders) and management requirements (where decisions are made). The alignment will also require TBL objectives at portfolio and project levels.

- Determine stakeholder expectations in relation to objectives (perhaps done already as part of previous step) and desirable levels of performance/ achievements for each.

- Determine the level of evaluation (portfolio, program, sub-program, project. Note sub-program and project levels can be collapsed into one level to reflect trend towards larger and more integrated projects, such as Grain and Graze).

B)   Planning (preparing for a TBL evaluation)

- Define intended outcomes (within each objective. A template can be used as a starting point – see Chapter 4).

- Select performance indicators.

- Determine baseline and without program scenario.

- Decide which data to collect and collection methods (including who should be consulted and methods).

- Determine basis for making judgments (including attribution).

C)   Doing a TBL evaluation

- Collect and collate baseline, without program and performance data (monitoring).

- Make judgments and assess performance (including causality and attribution).

- Identify and assess any unintended outcomes (positive or negative).

- Determine any integration issues (synergies and overlaps between financial, social and environmental outcomes)

D)   Reporting (saying what has been achieved)

- Document assessments and data sources according to overall TBL framework
    - Financial: document net present value (NPV), benefit cost ratio (BCR), net present value of R&D investment (NPVI)
    - Social: document outcome and level of performance
    - Environmental: document outcome and level of performance.
- Prepare consistent reports that meet (the different) stakeholder needs.
- Incorporate feedback loops (including assessment of whether the evaluation is collecting useful information for stakeholder accountability or management decisions).

3. Definition and alignment of current program objectives

The issue: objectives for MLA programs are not currently defined in terms of TBL, nor are they aligned to corporate objectives. This means that it is very difficult to conduct future TBL evaluations and it will not be possible to aggregate results. A similar issue is apparent with objectives of projects.

Response: The objectives for 5 programs, taken from Annual Reports, are presented below according to the TBL. The programs span LPI (Livestock Product Innovation), PPI (Processing Product Innovation) and Infrastructure (Supply Chains). The original wording has been kept as far as possible. The keywords that refer to the probable outcome are underlined. Further modification and alignment is desirable, however, this may change the program's focus. The social objectives, in particular, need further clarification by MLA.

Current program objectives:

Northern Beef

- Financial: Improve the productivity / profitability of beef production in northern Australia.
- Environmental: Improve management of natural resources so as to sustain the landscape, both on-property and beyond.
- Social: Improve producers' ability to exert greater positive influence over issues that affect their enterprise, their well-being and their communities.

Southern Beef

- Financial: Optimise beef production from available feed (grazing management, animal genetic gain); control cattle diseases; meet customer specifications
- Environmental: Enhance sustainability / prevent degradation by improving pasture management
- Social: Develop and implement best practice business and beef production skills

Lamb & Sheepmeat

- Financial: Increase profitability (increase productivity, lower costs of production); improve quality and compliance with customer specifications
- Environmental: Improve natural resource management
- Social: Enhance learning and adoption of innovation and technology; enhance information flow between producers and supply chain partners

Off-farm

- Financial: Develop <u>cost efficient</u> work systems; develop strategy for OH&S (part social)
- Environmental: Recognise and neutralise threats
- Social: Support <u>innovation capabilities</u> via individual processor R&D projects; improve <u>leadership</u> and employee <u>competencies</u> in processing sector

Supply chain

- Financial: Improve <u>production</u> efficiency, quality and food safety in supply chains
- Environmental: Improve <u>environmental performance</u> in supply chains
- Social: Build industry <u>knowledge and capability</u> in SCM, develop and apply new technologies (logistics, information transfer, product tracking); partner with industry groups

Feedlot

- Financial: Identify superior and alternative feedstuffs; develop managerial and nutritional options to meet market requirements; promote role of lotfeeding within beef production chain
- Environmental: Information to <u>meet environmental requirements and community standards</u> for waste, odour and welfare
- Social: Provide training in business <u>skills</u>; enhance <u>career paths</u>

<u>Recommendation:</u> Further define each program's objectives according to the TBL and align them with corporate objectives. In addition to enabling TBL evaluations to be conducted, this will also help capture synergies between different programs within the R&D portfolio. The social objectives, in particular, will need further modification.

4. Guidelines for selecting outcomes and performance indicators

The guidelines address the selection of likely outcomes that a program will seek to achieve (Table 4.1, see also Figure 4.1). Potential performance indicators that relate to these outcomes are nominated (Table 4.2). Indicators should be SMART (specific, measurable, attributable, relevant and timely). The usefulness of indicators can be assessed via their:

- Responsiveness to change in management;
- Ease of capture/measurement (including accuracy and cost);
- Ability to be aggregated; and
- Acceptance by community/users.

These suggested outcomes and indicators may need modification or addition to suit specific programs.

Table 4.1   Intended R&D outcomes

	Financial	Social	Environmental
Precursor for outcomes to occur	Financial parameters recognised and incorporated into all program/project activities	Social parameters recognised and incorporated into all program/project activities	Environmental parameters recognised and incorporated into all program/project activities
Short-term intended outcomes	Financial benefits developed & demonstrated	Developed networks and information flow	Environmental benefits developed & demonstrated
Medium-term intended outcomes	Producers aware of financial options

Capacity to change financial options – consideration and assessment of financial options | Improved capacity - knowledge, awareness, skills attitudes, confidence and motivation to change | Producers aware of environmental options

Capacity to change environmental options |
| Long-term intended outcomes | Practice change

Increased profits | Strengthened and expanded networks and information flow

Utilisation of additional capacity in other arenas of farm life

Achievements of personal and farm goals

Impacts on family, community and industry | Practice change
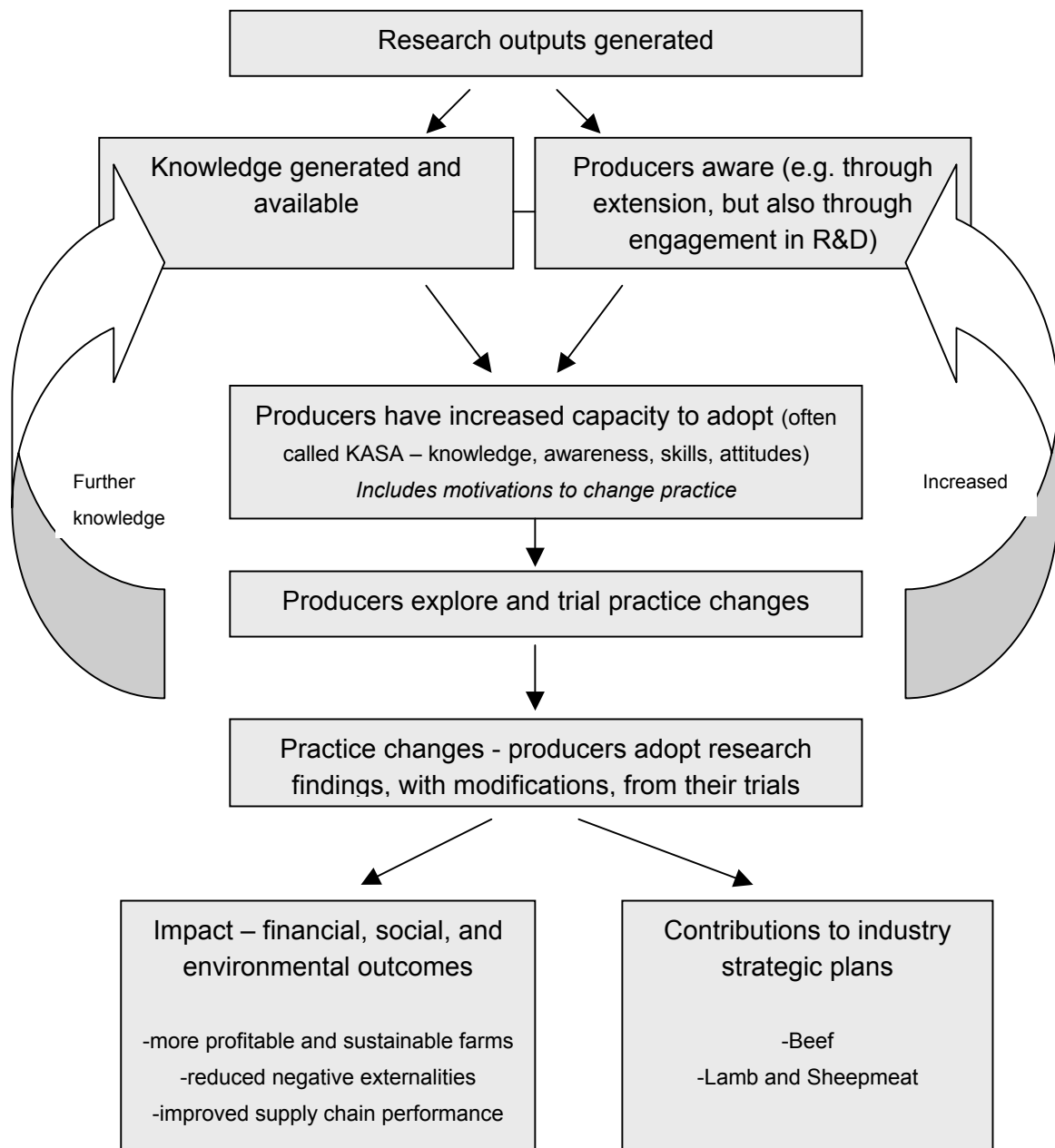
Improved "sustainability" |

Figure 4.1: Intended outcomes of MLA investment

Table 4.2   Potential performance indicators for outcomes[1]

	Financial	Social	Environmental[2]
Precursor for outcomes to occur	Financial parameters recognised and incorporated into all program and project activities	Social parameters are recognised and incorporated into all program and project activities	Environmental parameters are recognised and incorporated into all program/ project activities
Short-term outcomes	Research results show financial benefits (e.g. costs/kg production, rates of genetic gain, potential production, carcass weights)[3]	Developed networks and information flow Participation in R&D programs, groups or courses (number and frequency)	Research results show environmental benefits (e.g. improved groundcover % and duration; nutrient budgeting)
Medium-term outcomes	Producer awareness of financial options[4] Producers consider and assess financial options (number and extent) Property management plan incorporates parameters issues Producers have defined risk management strategies[5] (number and extent)	Confidence Capacity to manage farm (skills, knowledge, attitudes, motivation) Property management plan - developed, used and adapted	Producer awareness of environmental options[6] Producers consider and assess environmental options (number and extent) Property management plan incorporates environmental issues
Long-term outcomes	New practices adopted (e.g. changing enterprise, inputs, or timing of operations) $/ha/yr Gross Margins, by enterprise & whole of farm Changes to whole farm budget (incl. implementation costs) Kg/ha/mm rainfall $/ha/mm rainfall (whole farm) Costs/kg production % potential production achieved	Strengthened and expanded networks and information flow (changed relationships) Additional capacity is used in other arenas Achievement of personal and farm goals Impacts on family, community and industry	Remnant native vegetation size and connectivity (trees, shrubs, pastures/grasslands) Proportion of perennial species (trees, shrubs, pastures/grasslands) Groundcover % and duration

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[1] The outcomes and potential performance indicators may differ slightly for different supply chain participants, but will have the same basic form.

[2] Off-farm environmental indicators such as water quality will not apply to program/project level monitoring and evaluation. R&D Corporations should consider a collective response to determining R&D impacts on off-farm environmental issues.

[3] Might also include: mortality, turnoff rates, marking %, carcass weight, meat yield.

[4] Including customer specifications.

[5] This is a more general indicator of whether producers have considered and planned options to increase financial performance over the longer term. It would include: drought preparation, forward selling, futures, use of Farm Management Deposits, other.

[6] Including awareness of catchment management priorities and actions?

5. Methods of data collection

The methods for collecting necessary data for each of these performance indicators are summarised in Table 5.1.

> \# FSE – these need to be split into separate outcomes for financial, social and environmental

Table 5.1   Methods for data collection

Outcome	Indicator	Data source	Method	Comment
Precursor: FSE# recognised and incorporated	FSE# benefits are recognised and incorporated into all program and project activities	Program manager records	Review documentation Interview program manager	The program needs to be set up to achieve TBL outcomes
Short				
Research results show FSE benefits#	Research results show FSE benefits[7]	Program manager records	Review documentation	Need extent to which R&D has contributed to this outcome. How aggregate from project level to program levels?
Developed networks and information flow	Participation in R&D programs, groups or courses (number and frequency)	Program manager records Survey of participants Broader ABARE/MLA surveys	Review documentation Surveys	As above
Medium				
Producers aware of FSE options	Producers aware of FSE options	Survey of participants Broader ABARE/MLA surveys	Surveys Project reports	As above
<u>Capacity</u> to change FSE options	Producers consider and assess financial options (number and extent)	Survey of participants	Surveys Project reports	As above

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[7] e.g. costs/kg production, rates of genetic gain, potential production; improved groundcover % and duration; nutrient budgeting. See also previous footnotes.

Outcome	Indicator	Data source	Method	Comment
	Property management plan - developed, used and adapted. Includes FSE.	Survey of participants Broader ABARE/MLA surveys	Surveys	As above
	Confidence levels of participants	Survey of participants Broader ABARE/MLA surveys	Surveys	As above
	Capacity to manage farm (skills, knowledge, attitudes, motivation)	Survey of participants	Surveys Project/program level data collection	As above
	Producers have defined risk management strategies	Survey of participants	Surveys	As above
Long				
Practice change FSE#	Utilisation of additional capacity	Survey of participants	Surveys	As above
Increased profits	New practices adopted (e.g. change enterprise, inputs, or timing of operations)	Benchmarking; Survey of participants	Surveys Project reports Project/program level data collection	As above
	$/ha/yr Gross Margins, by enterprise and whole of farm	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
	Changes to whole farm budget (incl. implementation costs)	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
	Kg/ha/mm rainfall	Benchmarking; Survey of participants	Surveys	As above
	$/ha/mm rainfall (whole farm)	Benchmarking; Survey of participants	Surveys	As above
	Costs/kg production	Benchmarking; Survey of participants	Surveys	As above
	% potential production achieved	Benchmarking; Survey of	Surveys	As above. Comparison to

Outcome	Indicator	Data source	Method	Comment
		participants		potential production models – dry matter production, stocking rates, etc
Improved social outcomes	Extent of networks	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
	Examples of how additional capacity is being used (in other spheres of farming life)	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
	Extent of achievement of personal and farm goals	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
	Impacts on family, community and industry – examples, no specific indicator	Benchmarking; Survey of participants	Surveys Project/program level data collection	As above
Improved "sustainability"	Remnant native vegetation size and connectivity (trees, shrubs, pastures/grasslands)	Survey of participants NLWRA data?	Surveys Project/program level data collection	As above
	Proportion of perennial species (trees, shrubs, pastures/grasslands)	Survey of participants NLWRA data?	Surveys Project/program level data collection	As above
	Groundcover % and duration	Survey of participants NLWRA data?	Surveys Project/program level data collection	As above

The main data sources outlined in the table include:

- ABARE Annual Farm Surveys
- ABARE Supplementary NRM Survey 2001-02
- ABS census statistics
- Producer surveys – "follow-up" periodically after events and activities
- Commonwealth Government's Advancing Agriculture – Australia (AAA) producer surveys (biannual)
- National Land and Water Resources Audit (NLWRA)
- Any other broader MLA data collection

- Program Manager records (need to ensure collection of essential information)

- Project/program level data collection (e.g. tracking participant actions over time. Benchmarking. Follow-up surveys after events[8]. Case studies. Inputs from Grain & Graze?)

Responsibility for collecting data

Program Managers should be responsible for planning the program, keeping adequate records, implementing program specific data collection and overseeing the collection of project specific data.

Follow-up producer surveys and broader MLA data collection will need to be coordinated by senior management and is perhaps best implemented by a specific evaluation team/officer. The team/officer should also be responsible for assessing the data provided by ABARE/ABS.

ABARE data collection

ABARE collect information across a range of industries. Refining the data that is collected is both a whole of RDC issue as well as something for MLA to pursue to meet specific needs. The table of methods shows which indicators are of special interest to MLA.

Broader MLA data collection by Communication Unit

Collection of performance data needs to be integrated with the market research being conducted by the Communications Unit. MLA is particularly interested in adoption of key practices and therefore needs information for targeting and developing strategies that can increase adoption (e.g. brands, etc). Impact data needs to be collected to assess the effectiveness of these strategies, as well as the supporting R&D. In general it is difficult to link adoption to on-farm impacts (in both a causality and attribution sense).

Table 5.1 provides a framework for determining what data needs to be collected and hence what methods might be appropriate. The present methods used by MLA to collect data should only be continued if they provide the necessary data according to this framework.

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[8] In general, exit surveys only reveal very limited evaluation material in terms of outputs and outcomes. They can be useful to collect demographic and statistical information regarding participants.