Paper 10. The Measurement, Monitoring and Evaluation Strategy

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Abstract. A critical component of the Continuous Improvement and Innovation (CI&I) process described in Paper 4 above is Performance Assessment - analysing and interpreting the results achieved, and not achieved, in relation to the focus and target outcomes. This is made easier if specific Key Performance Indicators (KPIs) are established during Action Design and monitored during Action Implementation. The target outcome for the Measurement, Monitoring and Evaluation (MME) Strategy is to design and implement effective and efficient MME mechanisms that will demonstrate improvements and innovations in individual beef businesses and supply chains and in the broader Australian beef industry.

Keywords: Measurement; monitoring; evaluation; KPIs.

Background

The rationale for developing the Measurement, Monitoring and Evaluation Strategy is that:

- there is evidence of low and slow rates of adoption of new or improved technologies in the Australian beef industry, and of consequently low rates of productivity growth compared to most other agricultural industries;
- the BPP project is funded to contribute to raising this level of productivity growth and the associated economic impact, from the activities of the Beef CRC; and
- there are no consistent and readily accessible measurement, monitoring and evaluation mechanisms available to demonstrate improvements and innovations in individual beef businesses and supply chains and in the broader Australian beef industry and therefore achievement of the target outcomes of the Beef CRC.

Applying the Underpinning Science

As detailed in Paper 2, there is a large literature that discusses and promotes the critical need for measurement, monitoring and evaluation of CI&I actions and the related notion of evidence-based practice. Some of the key references are Robinson (1991), Kaplan and Norton (1992), Bessant et al. (1994), Chapman and Hyland (1997), Hyland et al. (2000) and Perrin (2006). Measurement and monitoring of outcomes is also becoming a more important issue in the traditional technology adoption literature (ISNAR 2003), although there is little evidence to date of impact on outcomes. Within the BPP project as a whole, there is an underlying critical need within the CI&I partnerships for effective and efficient MME mechanisms to ensure partners are able to demonstrate achievements and obtain feedback and support from each other in order to contribute to achieving further improvements and innovations within 180-day timeframes. There is a related need for the productivity and profitability, industry capacity, and partnerships and networks, focuses and outcomes to be measurable and for the achievements in these areas to be provable to Beef CRC management and other investors.

There is a corresponding broad literature on the impact that performance measurement has on firm behaviour and behaviour change. Some of the key references here are Mace (1935), Maskell (1989), Francis (1992), Kaplan and Norton (1992), Miller (1995), Kerssens-van Drongelen and Cook (1997), Smith (1999), Davies and Kochhar (2000) and Tovey (2001). It is also widely recognised that the particular measures of performance used have a strong influence on activities and results (Kaplan and Norton 1992). As Kerssens-van Drongelen and Cook (1997) have stated 'you get what you measure'. Performance measurement also supports the prioritisation of actions and enables comparing and tracking of performance changes and differences (Francis 1992; Miller 1995; Schumann, Ransley and Prestwood 1995; Kerssens-van Drongelen and Cook 1997).

Because measurement is so valuable in enabling and achieving improvements and innovations, a simple, effective measurement system should be designed, using a holistic approach (Kaplan and Norton 1992). Several authors advocate the design of systemic performance management frameworks, such as a balanced score card, which include

outcomes and targets, linked to critical success factors (CSFs) (Kaplan and Norton 1992; Waldman 1994; Sinclair and Zairi 1995; Harrington 1998; Cao, Clarke and Lehaney 2000; de Waal 2002; Marlow 2005). Since the measures of performance must align with the purpose of the measurement (Kaplan and Norton 1992), identification of key performance indicators (KPIs) that are linked to the CSFs is critical (Kaplan and Norton 1996; de Waal 2002; Marlow 2005). Davies and Kochhar (2000) further emphasise that key actions need to be designed, prioritised and linked to KPIs to ensure impact on CSFs, and the achievement of target outcomes.

To be of value in a partnership, KPIs need to be meaningful and easily shared so that they can be used to identify and promote practices and methods that achieve success. This is the idea of 'evidence-based practice' (Cochrane 1972; Stetler et al. 1998; Davies, Nutley and Smith 2000; Wolfe 2000; Stuart, Tondora and Hage 2004; Backer et al. 2005; Pfeffer and Sutton 2006). The measurement of KPIs also needs to be timely so that early and meaningful indications can be deduced of whether actions are achieving impact, or not. KPIs should provide both meaningful 'feed-back' and 'feed-forward'. Feed-back and feed-forward mechanisms and support for action to achieve targets all need to be timely, regular and frequent (McGregor 1960; Kast and Rosenzweig 1970; Reber and Wallin 1984; Radawski 1999; de Waal 2002; Marlow 2005).

Strategy Focus and Target Outcomes

Based on these considerations, the overall focus of the MME strategy is to support partners in achieving improvements and innovations in relation to the three BPP project target outcomes within 180-day timeframes, and to ensure partners and industry are able to demonstrate achievements.

Thus the overarching target outcome for this strategy is to design and implement effective and efficient MME mechanisms that will ensure the focus is met. This broad target outcome can be broken down into three specific outcomes that match the sub-outcomes of the overall project:

- To design and implement effective and efficient MME mechanisms that will demonstrate rapid and measurable improvements in productivity, profit and growth;
- To design and implement effective and efficient MME mechanisms that will provide feedback and ensure a supportive network of rewarding partnerships contributing to accelerated industry growth; and
- To design and implement effective and efficient MME mechanisms that will ensure that partners and industry are equipped to achieve sustainable improvement and innovation.

Implementation in the BPP Project

When designing and implementing the BPP project methodology, considerable importance is placed on having an outcome-focus, and on developing and actively using frameworks that incorporate outcomes, targets, CSFs and KPIs at a range of levels - from individual partner focuses for improvement and action, through to the whole-of-project system performance framework. This emphasis flows directly from the underpinning CI&I foundation of the project, and from the critical need identified above and in preceding papers to have an appropriate performance management framework in place. The methodology also places importance on the development of shared understandings of focuses, outcomes, targets and measures, and the key concepts that underpin these, to ensure more effective partnerships.

A number of 'Focussing frameworks' have been designed and actively used to support project partners to focus their thinking and action to achieve rewarding results. One such focussing framework is the Profit Driver Tree – a simple diagrammatic representation of the key drivers of profit in a beef business (see Figure 10.1). Using this framework, partners can trace through the impacts of practice or process changes in different parts of the farm business (for example buying in new genetics) on the various components of cost, income and ultimately profit.

Setting the focus of the BPP project on business profit ties directly to the target of the Beef CRC to achieve an additional $179 million per year growth in the Australian beef industry by 2012. However, as highlighted by Vanclay (1992, 2004) and others, maximising profit is not the only, nor often the most important, driving force for many primary producers, and appealing to economic incentives alone is not sufficient to bring about change. In recognition of this the focus for the BPP project is to achieve and accelerate improvements and innovations for

sustainable impact on business profit and industry growth. The challenge facing industries, regional and nations is to achieve sustained prosperity, and improved human, social and natural capital in a dynamic world. A number of different tools are advocated (such as the 8-Dimensions tool – see Table 3.2) that allow a range of non-profit objectives to be incorporated into BPP partner decision making.

Using the Kaplan and Norton (1992, 1996) approach, a set of KPIs has been developed for each of the three BPP target outcomes. They are listed in Table 10.1. These KPIs are a compromise between a number of conflicting considerations – a desire to measure outcomes using rigorous economic and statistical processes, the limited resources available, the variation in prior knowledge and skills of the facilitators and partners, and the operational and timing constraints of the partnership meetings.

These KPIs are incorporated into a performance management framework that links together focuses, target outcomes, CSFs, KPIs and key actions. Tools to support the development of shared understanding, such as the CI&I Game, are also used.

An example of a performance management framework for the first project outcome is given in Table 10.2.

A BPP Reporting and Support Framework has been developed to implement the MME strategy. This is outlined later in Paper 11. In terms of the first target outcome, partners assess their current situation in the early stages of the CI&I process and calculate benchmark data for the KPIs relevant to their business. A variety of financial analysis tools are available to assist in this task. Some examples include ProfitProbe, BreedCow, BeefCheque, Beef-N-Omics, Cost of Production calculator and a number of specific gross margin budgets. For many partners these tools will be familiar and many will have completed training in the tool and used it previously. For others, the concepts will be new and training will be provided. Then, after actions have been taken and outcomes achieved, the same KPIs are measured and improvements are calculated. This process continues each 180 days, or as decided by the group. While the primary focus for this outcome is economic KPIs, bio-physical productivity KPIs are also recorded as measures of practice change and early indicators of profitability changes.

In terms of the second and third target outcomes, facilitators and group members assess how the partnership and capacity building components of the project are improving and the relevant KPIs are completed each 180 days.

In the first instance, the various KPIs are reported, discussed and supported within the CI&I groups. This process provides evidence of the benefits of practice change and the incentive to continue in the project. Then, all of these data are transmitted back to the Strategy Leader and copied onto a master database. This database is being designed and implemented to provide the particular types of comparisons required by the BPP partners and the project wide evaluations. Evaluation of strategy KPIs, outcomes and focuses are undertaken there every 180 days, and the results will be fed into project wide evaluations. Tools such as charting of current and past performance against a scorecard will be used, and the aggregate impacts will be assessed in a whole of industry economic model.

At the whole of project system level (see Papers 4 and 5), a 'project scorecard' has been designed and is used regularly to help focus the project, assess performance, and to target areas for improvement and innovation. A comprehensive and agreed performance framework consisting of the project focus, three target outcomes and associated KPIs is actively used to both monitor the impact of the project, and to guide continuous improvement and innovation at all levels in the project. Examples of the type of project scorecards used are given in Figures 10.2 and 10.3. Figure 10.2 shows the average scores of the project management team for a set of KPIs of whether that particular 90-day meeting was successful.

Figure 10.3 shows the average scores of the larger management and state coordinators team for the set of KPIs (based on the SI&I model described in Paper 4) of whether the whole project is progressing successfully. The scorecards are updated as appropriate each meeting and compared over time to suggest areas for renewed efforts or revised approaches.

Issues in Implementation to Date

The MME strategy of the BBP project is responsible for providing training in the economic tools used by the partners, for designing and implementing a monitoring system to provide feedback to partners, and

for designing an evaluation system that will demonstrate rapid and measurable improvements in productivity, profit and industry growth. The MME team will also report and assess their performance against the strategy KPIs, outcomes and focuses, and will aim for continuous improvement and innovation in strategy activities.

These objectives and responsibilities have not yet been fully achieved, for a range of reasons:

- There were considerable delays in many of the BPP partnerships commencing their CI&I process, and ongoing delays due to facilitator involvement in non-BPP activities – drought relief workshops, etc.;
- There has been much debate about efficient measurement and reporting and support frameworks (see Paper 11) which has distracted some partnerships from recording and reporting what they have achieved;
- There are a range of economic tools being used to measure the profitability KPIs and some of these are only being used on an annual basis; and
- There has not been a sufficient awareness among many facilitators of the project focus on *rapid* adoption nor of the interdependent nature of the three project outcomes and thus the need for reporting on outcomes two and three.

However steps have been taken to reinforce what the project is trying to achieve and to revise the reporting framework so that all aspects of project achievements can be measured, monitored and evaluated. Some of these adaptations are reported in Paper 11 below.

Conclusion

A critical component of the continuous improvement and innovation process is Performance Assessment - analysing and interpreting the results achieved, and not achieved, in relation to the focus and target outcomes. This is made easier if specific KPIs are established during Action Design and monitored during Action Implementation. In this paper the implementation of the MME Strategy has been described to meet the objective of demonstrating improvements and innovations in individual beef businesses and supply chains and in the broader Australian beef industry.

Appendix

Table 10.1. BPP target outcomes and key performance indicators

KPIs for Target Outcome 1 – Achieving rapid and measurable improvements in productivity, profit and growth of beef businesses.

1. Price - $ / kg
2. Throughput - kg / ha
3. Costs - $ / kg
4. Profit - $ / ha (per product, enterprise or business)
5. Relevant on-farm bio-physical productivity KPIs (e.g. growth rate, reproduction %, death %)
6. Profit and productivity improvement in related enterprises

KPIs for Target Outcome 2 – Providing a supportive network of rewarding partnerships, contributing to accelerated beef industry growth.

1. Number and type of BPP partners
2. Number and value of BPP Focuses and activities
3. Number and value of BPP communications, resources and specialist support
4. Number and type of improvements and innovations shared
5. Value of BPP groups/teams
6. Value of the BPP network

KPIs for Target Outcome 3 – Equipping partners to achieve sustainable improvement and innovation.

1. Number of partners who understand and value, the concepts and process of CI&I
2. Number and value of CI&I tools used
3. Number and description of improvements and innovations implemented
4. Number of improvement opportunities assessed
5. Improved knowledge and skills of concepts, methods, tools and technologies
6. Number of concepts, methods, tools and technologies created, used and/or improved

Table 10.2. Example of a performance management framework for the BPP profit and productivity improvement focus

Target Outcomes	CSFs	KPIs	KPs
Measurable improvements in profit & productivity drivers, & growth every 180-days	1. Increases in Price (per product) 2. Increases in Turnover 3. Decreases in Costs (per product or enterprise or business) 4. Increases in Profit (per product or enterprise or business) 5. Changes in relevant on-farm productivity KPIs 6. Increases in productivity and profit in other enterprises in the region	1. $ / Kg (Price) 2. Kg / ha / time 3. $ / Kg (Costs) 4. $ / Kg (Profit) 5. eg, % Calves / cows mated, or % Deaths / herd-unit / time 6. % Profit and productivity in other enterprises	Each BPP group or partner reports on KPIs every 180-days and continuously improves the impact on the target outcomes

Profit / Productivity Drivers KPIs	2006		2007		2008		2009		2010	
Price - $ / kg (per product)										
Turnover - Average Kg / ha / time										
Costs – $ / Kg (per product or enterprise or business)										
Marketing Costs – $ / Kg / product										
Profit - $ / Kg (per product or enterprise or business)										
Reproduction Rate - % Calves / cows mated										
Health - % Deaths / herd-unit / time										
% Profit and productivity in other enterprises										

Figure 10.1. The profit driver tree

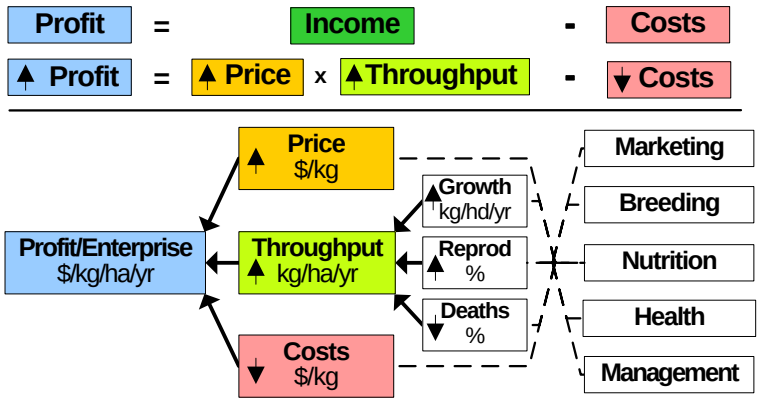

Figure 10.2. BPP project scorecard – meeting success

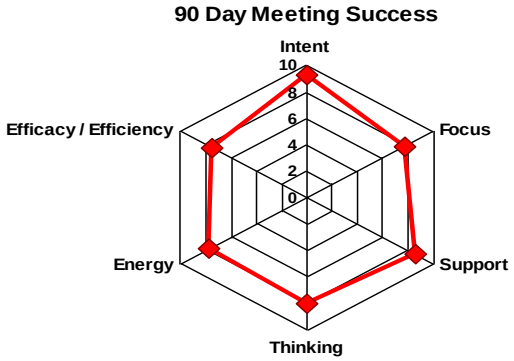

Figure 10.3. BPP project scorecard – SI&I success