



Program Evaluation for *Grain and Graze*

SUMMARY REPORT

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Executive Summary

The *Grain & Graze* Program (G&G) is a national scale experimental approach to co-investment in profitability and sustainability of mixed farm enterprises (grain and livestock) in Australia. The Program has invested in coordinated activities within nine Focus Regions for the purpose of aligning profit-based outcomes with natural resource condition and rural social capacity improvement.

The four Research and Development Corporations (Australian Wool Innovation Ltd, the Grains R&D Corporation, Land & Water Australia and Meat and Livestock Australia) invested approximately \$14 million over a 5-year period (beginning July 2003). This has attracted an estimated further \$18 million investment from collaborating organisations.

The Final Evaluation of the G&G Program has been undertaken during the final year (2007/8) of the Program to measure the processes of on-going change. The detailed methods of the evaluation are provided in the Evaluation Plan.

The Evaluation is based on five Key Evaluation Questions:

1. Was the *Grain & Graze* Program successful at national and individual regional levels in meeting the key stakeholder needs?
2. Has the *Grain & Graze* Program achieved the national and regional triple-bottom-line (TBL) goals, objectives and targets?
3. To what extent has the *Grain & Graze* Program achieved sustained practice change by producers, researchers and research managers?
4. What has been the return to investment in the *Grain & Graze* Program?
5. How effective has the design, management and administration of the *Grain & Graze* Program been?

Meeting Stakeholder Needs

The Evaluation Team considers that the needs of key stakeholders, including investing organisations and regional partners, have been adequately although not completely met.

Individual Research and Development Corporations (RDC's) indicate moderate satisfaction that their expectations of achieving targeted outcomes have been met based on recorded information at the time of the Final Evaluation. It is noted that further and ongoing targeted benefits may accrue to the Program in time to come.

Collectively, the RDC's recognise a higher level of achievement through unintended outcomes. These include enhanced partnership arrangements, a developed platform for co-investment and collaborative initiatives, and a share-values culture that is appropriate to efficient development of systems-based management for sustainable mixed enterprise farming.

There is considerable variation in the extent to which regional stakeholder needs have been met. Some were not well satisfied but others with low initial expectations were surprised as to how well their needs have been met (e.g. farm consultants).

Regions generally identify the short amount of time to deliver the Program and the prolonged drought as key factors that limited achievement of outcomes meeting stakeholder needs. While these factors are undoubtedly significant, they do in part mask two other significant Program development factors:

- 1) Clarification of stakeholder needs early in the Program (a pre-requisite for a client-focused approach to systems-based management), and
- 2) Appointing and retaining people with adequate capacity and experience to develop and deliver substantial systems-based practice change outcomes within relatively complex systems.

The G&G Program is a large, complex Program developed to meet a wide range of stakeholder expectations. It would be unrealistic to expect that one Program could meet the needs of all stakeholders involved. A few large successes, intentional or not, may rationalise the Program in the face of many identified deficiencies. The G&G Program has achieved sufficient large successes in practice adoption, partnership development and capacity-building to have adequately met key stakeholder expectations at both national and regional levels of the Program.

Triple-Bottom-Line assessment

The Evaluation Team finds that the national triple-bottom-line goals, objectives and targets have been substantially met during the period of investment for the G&G Program.

The evaluation finds that 75% of the awareness target, 35% of the participation target and 35% of the adoption target have been achieved during the period of assessment for the Program (i.e. up to June 2008).

Monitoring and Evaluation processes relating to targets and TBL principles have not been well adopted by the Regions or the national research projects.

Objective 1: More profit for mixed enterprise producers (building financial capital)

Grain and Graze has achieved increased profit for mixed enterprise producers by almost the targeted amount (9%, where the targeted amount was 10%) but not for as many producers as initially expected (1,100, rather than the targeted 6,800). The Program has been successful in generating profitability improvements through improved decision-making relating to current practices (systems-based improvement), rather than through adoption of new practices.

Objective 2: Better water quality and enhanced condition and diversity of plants and wildlife (building natural capital)

Achievement of this Objective cannot be inferred from the TBL analysis due to there being inadequate reporting on Natural Resource Management (NRM) outcomes. It is likely that water quality has improved, and the condition and diversity of plants and wildlife enhanced through the adoption of *Grain and Graze* key farm practices with NRM benefits. Progress has been made in terms of

protection of soil resources, although this is not specified in the relatively narrow definition of natural capital in this Objective.

Objective 3: Increased confidence and pride among Australia's mixed enterprise producers (building social capital).

Grain and Graze has achieved increased confidence and pride among Australia's mixed enterprise producers, although not to the extent that was initially expected. Confidence has increased for approximately 3,750 producers, and pride increased by approximately 200 producers, which is considerably less than the target of 6,800 producers, perhaps due to already high levels of pride amongst producers for many differing reasons.

The G&G Program was over-ambitious in expectations for achievement of targets at commencement. It is noted that the targets were initially set for the year 2015 but were contracted to become the achievement targets for the 5-year investment period. The Evaluation Team considers that the longer time period would be more realistic for achievement of the targets that were set relevant to that period.

Achievement of Sustained Practice Change

There are a large number of farm practices recommended by G&G. There has been significant adoption of a small number of effective farm practices. G&G has effectively achieved further adoption of existing practices, more than adoption of new practices.

The most successful adoption was achieved for grazing cereals (adopted by 284 producers across 5 Regions due to *Grain and Graze*). The second most successful level of adoption was for feedlots (269 producers although in only one region). The practice is being adopted primarily to protect the condition of soil resources.

The increased decision-making capacity of producers about adoption is considered to be as important as the levels of new practice adoption. Some are making informed decisions to increase the extent of a currently adopted practice. Others are making decision to not adopt. This provides benefits attributable to the Program by preventing financial loss (rather than achieving financial gain).

The most significant missed opportunities are inadequate adoption of a strategic approach (as outlined in the '*Change on Farm*' strategy) and inadequate engagement of NRM organisation initiatives to extend practices at a catchment or landscape scale in most regions.

Attribution of practice change to the G&G Program is difficult to measure. Regions assessed the level of attribution to the Program to be quite high, however those Regions that have effective adoption also have complementary Programs.

Return on Investment

The Evaluation Team considers there has been a good return to investment in the *Grain and Graze Program*, especially given the short time-frame and that many Regions have only recently commenced extension activities.

The present value of total costs of the Program is estimated to be over \$31 million. The investing RDC's had 43% equity in the total cost structure.

The estimated monetary benefits of the *Grain and Graze Program* are derived from estimates of increased profitability of farming enterprises of participating farmers. Assuming that the benefits last for a 10-year period from the start of the Program, the present value of the benefits is estimated to be \$46 million.

Overall, the Program has been cost-effective. The net present value of the Program (the difference between the present value of the benefits and the present value of the costs) is estimated to be \$15 million. The benefit cost ratio of the Program (the ratio of the present value of the benefits and the present value of the costs) is estimated to be 1.48, indicating that for every dollar spent on the Program there has been a \$1.48 return.

The Benefit Cost Ratio based on RDC investment alone is estimated to be approximately 3.4.

It is the Evaluation Team's view that the time frame of the G&G Program was too short to achieve significant adoption of recommended practices. It is likely that the further benefits would have been achieved if the Program had run for a longer time period.

Most quantified benefits of the Program have been derived from building on existing knowledge rather than creation of new knowledge for adoption of new practices. This is supported by the 9% perceived profit increase by producers participating in G&G activities who are extending the use of currently adopted practices on their properties.

Program Efficiency

The Evaluation Team finds that considering the ambitious scale and complexity of the *G&G Program* and some adverse conditions (especially the prolonged drought), the Program design, management and administration have been very effective in delivering expected and unintended outcomes of the Program.

Most involved consider that the delivery model was of appropriate scale and complexity to deliver the outcomes required with the exception of the effectiveness of some national research projects.

Many operational problems identified were addressed and resolved during the course of the Program. Other deficiencies are now well recognised and alternative strategies can be adopted in future Programs.

There was an almost competitive process between Regions to demonstrate a high level of participation but there was a more limited focus on understanding and applying processes for sustained adoption. The links between participation and adoption are apparent when the outcome is economic but less apparent for environmental and other social outcomes.

The most efficient delivery processes have occurred where the Regional Coordinator, the Steering Committee and partner organisations have a well developed understanding of these adoption processes appropriate to their Region.

A significant deficiency in the Program has been with the effectiveness of the national research projects for program delivery within the regions. The Evaluation Team considers that the set of 5 national research projects was well selected. Each project is addressing an important knowledge gap for the G&G Program. There are additional gap areas that could have been addressed, particularly for assessment of NRM benefits or impacts; however the priority for those initiated is appropriate.

Research capacity engaged through the national research projects was of very high calibre both in the professional people involved and their supporting facilities. It is then surprising that this capacity has not adequately aligned with the needs of the Program during the investment period. The general national expectation is that these projects are yet to yield their full beneficial outcomes. Significant analyses from some national projects were completed at the conclusion of the Program. Hence, some Regions may be able to use information after completion of the Program. However, this represents a significant missed opportunity for providing research information to farmers during the extension phase of the Program.

The Evaluation Team considers that early engagement of a science-based coordinator during the investment period would have substantially added value to the very high capacity but under-utilised research component of the G&G Program.

Conclusion

The Final Evaluation recognises that the *Grain & Graze* Program was developed as a complex, national-scale co-investment initiative to meet the needs of systems-based mixed farming systems in the high to medium rainfall agricultural areas of Australia. It has been delivered through regional processes in order to develop partnership opportunities through producer and natural resource management organisations.

The Program is structured on a Triple-Bottom-Line framework with specifically targeted economic, environmental and social outcomes. These targets were proportionally attributed to each of the nine Regions.

The Regions differed considerably in their ability to respond directly to the opportunities available through the G&G Program. Those with experience from previous or concurrent programs, having systems-based coordination skills and having a relatively high number of mixed-farmers within their target audience gained greatest benefit.

Achievement of targeted outcomes during the period of investment has been substantial although not complete. It is expected that further benefits from the Program will continue to accrue. In addition, there has been a range of unexpected beneficial outcomes, including partnership development, increased management capacity and new co-investment opportunities that add value to the monetary benefits identified from the total Program investment.

1. Introduction

The *Grain & Graze* Program (G&G) is a national scale experimental approach to co-investment in profitability and sustainability of mixed farm enterprises (grain and livestock) in Australia. It is innovative by investment in coordinated activities in nine Focus Regions within five States. A regional delivery approach is adopted to align production-based outcomes with natural resource condition and rural social capacity improvement.

The four Research and Development Corporations (Australian Wool Innovation Ltd, the Grains R&D Corporation, Land & Water Australia and Meat and Livestock Australia) invested \$14 million over a 5-year period (beginning July 2003). This has attracted a further \$18 million investment from collaborating organisations.

The expected Program outcomes were both for targeted triple-bottom-line achievements (for economic, natural resource and social capital) and for non-targeted cultural and institutional change.

An Evaluation Plan was prepared as Phase I of the Final Evaluation. It provides the concepts, methods, activities, analysis and reporting procedures for the evaluation. It facilitated participatory involvement by the Evaluation Team throughout the final year of the investment period. The Evaluation was conducted according to this Plan, and readers are referred to that document for the details of the Evaluation methodology.

The Evaluation is based on five Key Evaluation Questions:

6. Was the *Grain & Graze* Program successful at national and individual regional levels in meeting the key stakeholder needs?
7. Has the *Grain & Graze* Program achieved the national and regional triple-bottom-line (TBL) goals, objectives and targets?
8. To what extent has the *Grain & Graze* Program achieved sustained practice change by producers, researchers and research managers?
9. What has been the return to investment in the *Grain & Graze* Program?
10. How effective has the design, management and administration of the *Grain & Graze* Program been?

The detailed data, analysis and findings for each of these Key Evaluation Questions are presented in five separate Key Evaluation Question Reports for each Question. The detailed data and analysis for each Region is presented in a further nine separate Regional Reports, one for each Region.

The overall outcomes of the evaluation, with Key Findings, are summarised in this Final Report. Readers can reference the Key Evaluation Question Reports for the detailed information used to justify these findings.

2. Methods

The Evaluation was undertaken in three Stages:

Stage 1 – Information collection and regional engagement

- Survey A: Focus Region Survey
- Survey B: Farmer Survey
- Survey C: National Research Projects Survey
- Survey D: National Operations Team Survey
- Survey E: Program Management Committee Survey

Stage 2 – Information analysis and reporting

- Triple Bottom Line Analysis (for awareness, participation and adoption),
- Benefit Cost Analysis (to assess return on investment), and
- Qualitative Information Analysis (to identify success factors and barriers to change).

Stage 3 – Presentation and review

- Focus Region review processes,
- Program Management Committee presentation and review.

Timelines for each of these stages is presented in Table 2.1. For further information on the methodology, readers are referred to the Evaluation Plan.

Table 2.1 Timeline of Final Evaluation Activities

Activity	2007						2008					
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Stage 1: Information collection and regional engagement												
Survey A												
Survey B												
Survey C												
Survey D												
Survey E												
Stage 2: Information analysis												
Stage 3: Presentation and Review												

An additional process was to review the Final Reports prepared by each of the nine Regions and five national projects after completion of the investment period. This enabled final analysis of quantitative outcomes of the Program in October 2008.

3.KEQ #1 – Meeting stakeholder needs

The first Key Evaluation Question (KEQ#1) for assessment of the *Grain & Graze* Program (G&G) is:

Was the Grain & Graze Program successful at national and individual regional levels in meeting the key stakeholder needs?

Collation and analysis of information in response to this question is documented separately in the **KEQ#1 Report**. A set of Key Statements are identified below from the analysis in that report.

Review of key statements

Information to address KEQ#1 was derived from workshop processes and semi-structured interviews with the PMC and with a range of stakeholder groups for each of the Regions. The processes initially identified national and regional needs as their expectations from investment or involvement in the Program. The responses showed the level to which these expectations have been met.

PMC assessment of achievement of their expectations is shown in Table 3.1. These range from minimal to substantial (scores 1-4) indicating the varying perceptions of Program achievements.

Table 3.1 PMC responses to achievement of expectations

Evaluation question	W/shop	AWI	GRDC	LWA	MLA
Revised workshop response	2-4	2	2-4	3	2
Landholder representative response		3	3	1	3

Note: 1. 0=none, 1=minimal, 2=moderate, 3 =significant, 4=substantial, 5=complete

Table 3.2 shows the range of responses for stakeholder groups in the Regions. This indicates a generally higher level of perceived achievement of stakeholder needs in Regions (e.g. for the Corangamite Glenelg-Hopkins Region) and for some stakeholder groups (e.g. agribusiness). Of all stakeholder groups in the Regions, 27% were substantially satisfied that the Program met their needs.

Table 3.2 Regional stakeholder response to achievement of expectations

Region	Farmer producer	NRM* organisation	State* Govt. agency	Producer organisation	Agri-* business	Research organisation
Avon	1	3	2	1	2	2
Border Rivers	3	4	3		2.5	3
Central West Lachlan	4	3-4	3-4	2-4	5	
Corangamite Glenelg-Hopkins	4	3	4	4	4	
Eyre Peninsula	3	2	3-4		4	2
Mallee	2	3	3	3		
Maranoa-Balonne	2	2-3	2-3		1-2.5	
Murrumbidgee			4		4	
Northern Agricultural Region	4	3-4.5	3		3	

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete
 2. * = additional information derived from semi-structured interviews.

3.1 Major expectations of the Program

There were three major expected outcomes from the Program in meeting key stakeholder needs:

1. Development of a whole farming systems approach to management of mixed enterprise farms.

This was clearly stated by PMC and producers in most, although not all Regions. There was an over-riding expectation that a systems-based approach to management would result in an increase in production and an increase in farm profit. Other expectations from a systems-based management approach were:

- 1) That there would be an **increase in the livestock component of mixed farming systems**. Some PMC comments noted that livestock seemed secondary to cereal production, however analysis of regional comments shows that there was high achievement of meeting stakeholder needs for management of livestock as a part of farming systems. Recognition of the value of grazing cereals to meet identified feed gaps is one example for most Regions where producer expectations have been substantially met,
- 2) **Increased farmer decision-making capacity for systems-based management**. This was not well articulated by producers or producer groups but was recognised by government agencies and farm consultants. The achievements that met this need are difficult to measure but are reflected in levels of adoption for some practices.
- 3) **Increased resilience of farming systems and the ability to management risk**. This was a clearly stated need particularly in some Regions (e.g. Border Rivers and Maranoa-Balonne). The initial focus was on general seasonal variability but became more specifically focused on drought during the period of investment. The original

expectations of increased capacity for risk management have not been substantially met as a result of the Program due in large part to there being insufficient Programs with a primary focus on drought, climate change and more general risk management.

The need for increased risk management capacity was vicariously met through some projects, especially those focused on feed-gap analysis (e.g. the national Feed-base project, adoption of the MLA Feed-base calculator). The pro-longed drought during the G&G Program period engaged the interest of many producers seeking information to manage risk.

The relatively small numbers of initiatives for economic-based analysis of farming system scenarios were effective where they occurred. The initiative in the Eyre Peninsula Region was considered to be very effective in increasing the capacity of producers to manage risk, however the availability of this initiative in the Region was limited. Equivalent initiatives in other Regions were not evident.

- 4) **Addressing the range of major farming system issues** was expected although not adequately met. Several respondents at national and regional levels noted important areas of farming systems not addressed by the Program, including soil nutrient benefits from pasture-crop options and soil health issues. These issues were generally identified as retrospective expectations and were not clearly articulated as being needs of G&G by either PMC or through initial producer surveys.

2. Partnership opportunities and development of a cooperative culture for multiple benefit outcomes from a systems-based approach to management.

The opportunity to build on existing capacity by adding value through collaboration was expected of the Program by almost all national and regional organisations. This was considered important to increase the value of individual organisation investment, increase the range of benefits and reduce in-efficiencies and duplication. The expectation was that this would occur through development of the relatively neutral culture branded as *Grain & Graze*.

This expectation by organisations has been well met. Change in organisational culture, especially through a shared investment platform, could be expected to incur difficulties. Many organisations, including the PMC and some regional Steering Committees, noted difficulties with building team-based arrangements from existing organisations cultures including resistance to compromise and occasional conflict.

Even those organisations that encountered difficulties generally concluded satisfaction with the partnership arrangements and shared cultures that were built as a result of the G&G Program. The identified benefits include a shift towards a client-based research and extension approach (addressing identified needs) and a greater focus on whole systems rather than superficially linking components of systems.

3. Achieving NRM outcomes

Expectations of improved natural resource condition were stated by individual RDC's and by some Regions however there was apparent reluctance at all levels to be specific about what their expectations might be. High-level strategic statements for the G&G Program identify 'water quality' and the 'condition and diversity of plants and animals' without clarifying what was expected as NRM outcomes. There were no clear targets set for NRM achievement. It was expected that the PMC would provide direction for adoption of practices that provide NRM benefits and that this would be reflected by the Regions through their respective Regional Success Indicators (RSI's).

Delivery of the G&G Program was deliberately chosen to be through Regions that align with the relatively recently formed NRM Regions. One expectation of this arrangement was that respective NRM organisations would be engaged in the Program and through this engagement, contribute towards delivery of NRM outcomes. All NRM organisations have some level of targets both for short term management actions and longer-term resource condition change.

The expectations of the NRM organisations from their involvement with G&G were surprisingly intangible and limited. Most were seeking to build their own organisational credibility and to expand their target audience range by association with the Program. None responded that their expectation was for improved resource condition as a result of the G&G Program (unless prompted within workshop or interview processes). State government agencies were generally more focused in their expectations of NRM outcomes than were any other regional stakeholder groups.

Despite relatively low specific expectations expressed for NRM outcomes, a relatively high level of achievement was identified in some Regions (e.g. the Mallee Region for soil protection and Northern Agricultural Region for groundwater recharge management). The national Biodiversity research program was influential in developing awareness and changing attitudes towards improved management for NRM outcomes in some Regions.

The RDC's remained disappointed by the level of achievement according to their expectations for NRM outcomes. One reason for this is undoubtedly due to the poor level of reporting for NRM activities and achievements (with the exception of the higher profile national Biodiversity project). The opportunity remains for improved reporting on NRM outcomes through the Final Report processes for regions and national research projects.

3.2 Differing expectations

The evaluation shows there to be widely differing expectations within the G&G Program. This may not be surprising considering firstly that it is based on whole farm systems which differ considerably across Southern Australia, and secondly that the processes adopted were open for Regions to identify their own management needs.

The considerable differences in expectations from the Program do reflect the inadequate Program development during the early stages. Some response comments note that there was adequate time and support available for strategic development at national and regional levels (up to 2 years of the Program was considered to have been developmental). However, a frequent response comment was of the lack of clarity about the purpose and objectives of the Program, both within PMC and by the Regions. The broad scope and inherent complexity of the Program may have been difficult for some participants to comprehend and then relate to their own Program component. Differing expectations were developed for smaller Program components than for the entire Program.

At a national level, this enabled there to be a level of flexibility in the Program to accommodate a wide range of expectations which has proven to be beneficial. However, differences in expectations at a regional level have proven to be troublesome.

Those Regions that had clearly identified their farming systems management needs either through preceding or existing parallel Programs (e.g. Corangamite Glenelg-Hopkins and Northern Agriculture), or by effective producer consultative processes (e.g. Eyre Peninsula) were better able to develop a focused or flexible response Program. Some Regions in their earlier formative stages were unclear about their Program focus until well into the investment period. The Avon Region experienced a change in focus due to a change in understanding of management needs mid-way through the Program.

The complexity of the G&G Program enabled many expectations to be met through co-investment however inefficiencies occurred, not due the range of expectations, but as a result of poor definition, limited clarity and insufficient communication about what the needs were and hence, what the focus of the Program should be. The Regions that are least satisfied with achievement of expectations from the Program (as shown in Table 3.2) are those that had least clarity about the needs that were to be met through the G&G Program. Some Regions with only limited clarity about the Program either had ineffective regional communication and consultation processes, or had not comprehended the opportunity being communicated nationally.

3.3 Unintended outcomes

Development and implementation of relatively complex Programs over an extended period of time do deliver unintended outcomes. The PMC identified a range of unintended outcomes, most being about Program governance and capacity.

The RDC's separately and the PMC collectively had under-estimated the scale and complexity of the G&G Program. There was an apparent perception that individual organisational benefit could be expected through co-investment. However it was development of the larger systems-based collaborative culture of G&G representing more than the sum of the individual investor parts that was not intended (or at least not stated in Program documentation). This is considered to be beneficial by having organisations learn to collaborate within a complex operational space.

A detrimental factor of the Program was in having a lower than expected level of capacity available for delivery of systems-based research and extension, particularly within Regions. This circumstance was not adequately estimated at the commencement of the Program. Not all professional or technical people are easily able to comprehend and work within systems-based management. There is a level of frustration expressed by those who do understand systems that others can not do so. Differences in understanding of systems-based management are a likely cause of differences in expectations and clarity of purpose for the Program by partner organisations.

The G&G Program significantly under-estimated the capacity available to deliver relatively complex systems-based practice change. Inexperience in systems management and high staff turn-over reduced the potential to meet regional needs. More cautious appointment of key staff and ensuring their continuity of employment for the duration of the Program are considered to be key factors in successful achievement in meeting stakeholder needs.

Both the PMC and the Regions recognised that farm consultants and other forms of agribusiness have the potential capacity to develop and deliver complex farming systems practice change. This sector was not adequately engaged particularly in the early stages of the Program. Recognition of this capacity is a beneficial unintended outcome of the Program.

The Regions identified some unintended outcomes, although they are relatively difficult to attribute to G&G as the Program was linked to other complementary Programs in all Regions. The outcomes and influence of the national Biodiversity project as perceived by the Regions are their most significant unintended outcomes for the Program.

Evaluation Team Assessment

The Evaluation Team considers that the needs of key stakeholders have been adequately although not substantially or completely met.

The individual RDC's indicate only moderate satisfaction that their expectations have been met, however collectively, the PMC indicates that there is a higher level of satisfaction with meeting their needs largely through achievement of unintended outcomes. These include enhanced partnership arrangements, a developed platform for co-investment and collaborative initiatives, and a share-values culture that is appropriate to efficient development of systems-based management for sustainable mixed enterprise farming.

It is noted that the assessment by RDC's about achievement of Program expectations was made prior to completion of the investment period and without their full knowledge of the measured Program outcomes.

The extent to which the needs of regional stakeholders have been met varies considerably. Some stakeholders with high expectations were not satisfied, however other stakeholder groups with low expectations of the Program were surprised as to how well their needs have been met (e.g. farm consultants). This accomplishment of achieving beyond some stakeholder expectations is in itself significant.

The Regions generally identify the short amount of time to deliver the Program and the prolonged drought as key factors that limited achievement of outcomes meeting stakeholder needs. While both of these factors are undoubtedly significant, they do in part mask the two more significant Program development factors:

- 3) Clarification of stakeholder needs early in the Program (a pre-requisite for a client-focused approach to systems-based management), and
- 4) Appointing and retaining people with adequate capacity and experience to develop and deliver substantial systems-based practice change outcomes within relatively complex systems.

The G&G Program was envisaged, and has been developed, to meet a wide range of stakeholder expectations. Development of any large, complex Program will be characterised by both its successes and its deficiencies. It would be unrealistic to expect that one Program could meet the needs of all stakeholders involved.

The effectiveness of the Program is better assessed by recognising the successes in meeting expectations and then critically reviewing the deficiencies. A few large successes, intentional or not, may rationalise the Program in the face of many identified deficiencies. The G&G Program has achieved sufficient large successes in practice adoption, partnership development and capacity-building to have adequately met key stakeholder expectations at both national and regional levels of the Program.

The full yield of the Program should meet more and ongoing stakeholder needs beyond the period of Program investment.

4.KEQ #2 – TBL framework

The second Key Evaluation Question (KEQ#2) for assessment of the *Grain & Graze* Program (G&G) is:

Has the Grain & Graze Program achieved the national and regional triple-bottom-line (TBL) goals, objectives and targets?

Collation and analysis of information in response to this question is documented separately in the **KEQ#2 Report**. A set of Key Statements are identified below from the analysis in that report.

Review of key statements

Information to address KEQ#2 was derived from source documents and from a range of workshop processes and semi-structured interviews with the PMC and with a range of stakeholder groups for each of the Regions.

4.1 Achievement of the national M&E Plan and TBL targets

The G&G Program has a clearly stated Goal and a set of Objectives that represent Triple-Bottom Line (TBL) outcomes.

The National Monitoring and Evaluation Framework adopts TBL principles within 4 themes:

1. building integrated grain and graze systems
2. building financial capital
3. building social capital
4. building natural capital

Each of these themes has five levels of inputs, outputs and outcomes arranged according to principles of the '*Bennett's hierarchy*' within a logical framework.

Targets are set for achievement of TBL outcomes nationally as a result of the G&G Program. These are attributed proportionally (based on the number of producers) for each Region.

Producer awareness targets

The national target set was for **24,000** producers to be aware of the G&G Program. AGSCAN data based on the proportion of farmers in each Region who are aware of the Program, and multiplying it by the number of producers in each Region (includes all producers, not just mixed-enterprise producers) estimated national awareness to be **45,353**. On this basis, three Regions reached their target for this indicator, although another three Regions came close to achieving their target. If these estimates are adjusted to be based on the number of mixed farmers in each Region (identified from the *National Change on Farm Strategy*), the estimated national awareness is **18,271**.

Producer participation targets

The national target set was for **15,000** producers to be participating in the G&G Program. AGSCAN data based on the number of mixed farmers in each Region (identified from the *National Change on Farm Strategy*) provides an estimated national awareness to be **5,259** producers.

The Milestone and Final Reports indicate that **14,510** producers have participated in the Program (not including participation by farmers outside the Regions). This estimate is significantly higher than estimates using AGSCAN data. It is the consultants' view that the Milestone and Final Reports over-estimate the actual number as it is likely that the same farmers are included multiple times if they have attended multiple events.

One Region achieved their target for this indicator according to estimates from AGSCAN, although five Regions achieved their target according to the Milestone and Final Reports.

Producers adopting Grain & Graze recommended practices

The national target was set for **6,800** producers to be adopting G&G practices. From Survey B information, an estimated **2,358** producers are adopting these practices attributable to *Grain and Graze*. Many other producers are adopting these practices for reasons not attributable to G&G (estimated to be approximately 26,000).

Based on Milestone and Final Reports, the number of producers adopting recommended practices is estimated to be **2,902** (information from 7 Regions). The reliability of this estimate is unknown as most reporting Regions did not clearly articulate their methods for estimation.

According to AGSCAN data, one Region achieved their target for this indicator. According to the Milestone and Final Reports, five Regions achieved their target.

The national target was for **50%** of all adoption being attributable to the G&G Program. The estimated outcome is **23%** based on data from Survey B (% differentiation of practices between participants (95%) and non-participants (72%)) for the three key practices articulated for each Focus Region).

Only one Region reported achieving the target of greater than 50% differentiation.

Percentage increase in profit

The national targeted increase in profit due to adopting of G&G Program practices was set for **10%**. The estimated outcome was estimated to be **9%** (attributable only to *Grain and Graze*) using data from Survey B, where farmers estimated their perceived change in profitability due to their involvement in the Program (i.e. for all practices).

The estimated profit increased derived from Survey B information for each Region is shown in Table 4.1. This shows the profit increase to range from 2-3% up to 19%.

Table 4.1 Perceived profit increase due to adoption of G&G practices estimated for each Region

Region	Avon	BR	CWL	CGH	EP	Mallee	MB	Murr.	N Ag
Profit increase (%)	2	8	7	4	10	6	12	19	3

Perceived increases in profitability due to the Program were consistently high for farmers in the Murrumbidgee Region, with an overall estimated increase in profitability of 19%. This may be accurate given that grazing of winter wheats was perceived to have had a large impact on profitability in the Region. Also, increased confidence in decision-making was especially high, perhaps indicating that *Grain and Graze* had provided strong support to farmers during the drought.

Three Regions, including the Murrumbidgee, achieved the target for this indicator.

Secondary targets

There was little information available to assess the secondary targets for building financial capital however it is noted that approximately 1,100 producers are reported as having increased financial decision-making skills (14% of that target).

Information shows that almost 4,000 producers are reported as having increased confidence and decision-making skills as a result of the G&G Program (55% of that target). Considerably fewer producers reported an increase in pride as a result of the Program (approximately 200, 3% of the target), noting that the pride among producers is high with or without the Program.

Reported information also shows that over 1,500 producers have increased NRM decision-making skills (19% of that target) and approximately 1,250 producers are adopting recommended practices with NRM benefits due to participation in *Grain and Graze* activities (18% of that target). As previously noted, recording of NRM benefits is inadequate and does not show the level to which these benefits accrue from adoption of recommended practices.

A summary of the achievement of the primary targets is provided in Table 4.2. (building integrated systems). Tables 4.3 – 4.5 provides summary information for achievement of the secondary targets (building financial, social and natural capital). Detailed information relating achievement of targets by each Region is included in KEQ#2 Report. It should be noted that all indicators are reported for the nine Regions, and for farmers outside the Regions. They are not reported against for the 5 national research projects as most indicators are not relevant for them.

Table 4.2 Primary indicators and targets (Building Integrated Systems) – Overall achievement

BUILDING INTEGRATED GRAIN & GRAZE SYSTEMS	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
1. Grain & Graze recognises and incorporates triple-bottom-line systems approaches into its structures and sub-Program activities.	i. % of project contracts incorporating TBL objectives	100%	100%	Contract schedules
	ii. % of projects reporting against TBL objectives	100%	Low ^a	Milestone and Final Reports
	iii. Evidence of TBL incorporated into publications	At least 5 new documented examples	More than 5	Milestone and Final Reports
	iv. Cumulative No of regional sites established incorporating TBL objectives	120	Not reported	Available documents
2. Grain & Graze develops and demonstrates farming systems that, if adopted, would meet the TBL goal and objectives of the Program.	i. Total No of Regions quantifying TBL benefits	8	0	Available documents
	ii. % of demonstration sites producing TBL outputs	100%	Not reported	Available documents
	iii. Cumulative No of producers aware of G&G	24,000	45,648	AGSCAN
	iii. Cumulative No of <i>mixed-farming</i> producers aware of G&G	24,000	18,271	AGSCAN/National Change on Farm Strategy
3. Grain & Graze improves farmers' knowledge about the requirements of sustainable integrated mixed farming systems, and increases the skill level of mixed farmers to enable them to affect change-on-farm.	i. Cumulative No of producers participating in G&G activities	15,000	5,259	AGSCAN/National Change on Farm Strategy
			14,510	Milestone and Final Reports
	ii. Cumulative No of mixed farming system training courses conducted	200	173	Milestone and Final Reports
	iii. Cumulative No of participants reporting increased skills	8,000	3,755	Survey B
			3,353	Milestone and Final Reports

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BUILDING INTEGRATED GRAIN & GRAZE SYSTEMS	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
4. Grain & Graze contributes to practice change on participating farms pointing towards more sustainable, mixed farming systems meeting TBL aspirations.	i. Cumulative No. of producers adopting Grain & Graze recommended practices (<i>including adoption not attributable to GnG</i>)	6,800	26,009	Agscan/National Change on Farm Strategy
	i. Cumulative No. of producers adopting Grain & Graze recommended practices (<i>adoption attributable to GnG only</i>)	6,800	1,218	Survey B
			2,902	Milestone and Final Reports
	ii. % differentiation of practices between participants and non-participants	>50%	23	Survey B
5. Adoption of sustainable mixed farming systems that seamlessly integrate natural, financial and social considerations into the decision processes of mixed enterprise producers.	i. Change-on-farm showing that producers who have adopted G&G recommended practices are more profitable (10% in livestock and 5% in cropping), are behaving consistently with their relevant catchment plan priorities, and are more confident and proud than non-adopters.	10% increase profit ^c	9%	Survey B

^a The triple-bottom-line objectives and indicators are not fully articulated in the Milestone and Final Reports. Hence, the Regions did not specifically report against them.

^b In conducting this triple-bottom-line analysis, the consultants used data from Survey B and the Milestone and Final Reports. 'Not reported' is written along-side each indicator where information is not specifically available from these sources to assess this indicator.

^c Note, only a profit target was set for this indicator.

Table 4.3 Secondary indicators and targets (Financial capital) – Overall achievement

BUILDING FINANCIAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
1a. Grain & Graze recognises and incorporates financial considerations into all sub-Program activities; regional research, change-on-farm, and information management.	i. % of G&G regional initiatives incorporating economic objectives	100%	100%	Contract Specifications
	ii. % of projects reporting against economic objectives	100%	Some	Milestone and Final Reports
	iii. Evidence of economics incorporated into G&G packages and products	At least 5 new documented examples	More than 5	Milestone and Final Reports
	iv. Cumulative No of regional sites established incorporating economic objectives	120	Not reported	Milestone and Final Reports
2a. Grain & Graze develops and demonstrates more productive and profitable mixed farming systems.	i. Total No of Regions quantifying economic benefits of alternative management options	8	8	Liaison with Regions, and Final Reports.
3a. Grain & Graze improves farmers' knowledge of the options for profitable mixed farming systems, and their skills for establishing and managing these systems.	i. Cumulative No of producers participating in activities involving an economic component	15,000	>10,146	Milestone Reports
	ii. Cumulative No of mixed farming system training courses conducted, involving an economic component	200	>113	Milestone and Final Reports
	iii. Cumulative No of participants reporting increased financial decision-making skills	8,000	1,119	Survey B
4a. Grain & Graze contributes to practice change on participating farms pointing towards increased productivity and profit.	i. Cumulative No. of producers adopting Grain & Graze recommended practices, including financial decision making	6,800	Poorly reported	Survey B and Final Reports.
	ii. % differentiation of practices between participants and non-participants	>50%	None reported	Survey B and Final Reports.

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BUILDING FINANCIAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
5a. Adoption of Grain & Graze recommended practices contribute to improvements to the production and operating profits of mixed farming producers involved in the Program	i. No of adopters attributing increased profitability to G&G	6,800	1,114	Survey B

^a In conducting this triple-bottom-line analysis, the consultants used data from Survey B and the Milestone Reports. 'Not reported' is written along-side each indicator where information is not specifically available from either of these sources to assess this indicator.

Table 4.4 Secondary indicators and targets (Social Capital) – Overall achievement

BUILDING SOCIAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
1b. Grain & Graze recognises and incorporates social considerations into all sub-Program activities; regional research, change-on-farm, and information management.	i. % of G&G regional initiatives incorporating social objectives	100%	100%	Contract schedules
	ii. % of projects reporting against social objectives	100%	77%	Milestone Reports
	iii. Evidence of social factors incorporated into G&G packages and products	At least 5 new documented examples	More than 5	Milestone and Final Reports
2b. Grain & Graze fosters the development of regional networks and linkages to share information between individuals and groups.	i. Total number of regional sites where information is shared among local networks	120	Not reported	Milestone and Final Reports
	ii. Total No of participants with an ongoing involvement in Grain & Graze regional sites	4000	Not reported	Milestone and Final Reports
	iii. Evidence of cross-site and cross regional interaction and learning among participants	At least 5 documented examples	More than 5	Milestone and Final Reports
3b. Grain & Graze contributes to achievement of personal growth and aspirations, and to improved decision making through increased skills, knowledge and understanding.	i. Cumulative No of producers participating in activities involving elements of personal growth and skills enhancement	15,000	>5,868	Milestone and Final Reports
	ii. Cumulative No of mixed farming system training courses conducted, involving elements of personal growth and skills enhancement	200	>41	Milestone and Final Reports
	iii. Cumulative No of participants reporting increased decision-making skills	8,000	3,755	Survey B
4b. Grain & Graze builds the confidence of farmers and motivates them to improve the	i. Cumulative No. of producers motivated to adopt Grain & Graze recommended practices - <i>attributable to G&G only</i>	6,800	1,218	Survey B

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BUILDING SOCIAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
management of their mixed farming systems, and to adopt new management practices.	ii. % differentiation of practices between participants and non-participants	>50%	23%	Survey B
5b. Farmers involved in Grain & graze are competently and confidently managing their farming systems, building pride in self, family, property, community and product.	i. No of adopters attributing increased pride and confidence to G&G			
	- confidence	6,800	1,807	Survey B
			3,755	AGSCAN/National Change on Farm Strategy
- pride	6,800	200	Survey B	

^a In conducting this triple-bottom-line analysis, the consultants used data from Survey B and the Milestone Reports. 'Not reported' is written along-side each indicator where information is not specifically available from either of these sources to assess this indicator.

Table 4.5 Secondary indicators and targets (Natural Capital) – Overall achievement

BUILDING NATURAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
1c. Grain & Graze recognises and incorporates environmental issues into all sub-Program activities; regional research, change-on-farm, and information management.	i. % of G&G regional initiatives incorporating NRM objectives	100%	100%	Contract schedules
	ii. % of projects reporting against NRM objectives	100%	Poorly reported	Milestone and Final Reports
	iii. Cumulative No of regional sites established incorporating nrm objectives	120	Poorly reported	Milestone and Final Reports
	iv. Evidence of NRM factors incorporated into G&G packages and products	At least 5 new documented examples	Poorly reported	Milestone and Final Reports
2c. Grain & Graze develops and demonstrates mixed farming systems that are more sustainable on-farm, and that reduce the off-farm environmental impacts.	i. Total No of Regions quantifying NRM benefits of alternative management options	8	1	Milestone and Final Reports
	ii.. Evidence that regional initiatives are consistent with regional catchment plans	Documented evidence	3	Available documents
3c. Grain & Graze provides opportunities to increase the knowledge and awareness among participating farmers of environmental issues associated with mixed farming systems.	i. Cumulative No of producers participating in activities involving an nrm component	15,000	Poorly reported	Milestone and Final Reports
	ii. Cumulative No of mixed farming system training courses conducted, involving an nrm component	200	Poorly reported	Milestone and Final Reports
	iii. Cumulative No of participants reporting increased nrm decision-making skills	8,000	1,520	Survey B

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BUILDING NATURAL CAPITAL	INDICATORS OF ACHIEVEMENT	TARGETS - YR5	OVERALL OUTCOME	DATA SOURCES
4c. Grain & Graze contributes to practice change on participating farms pointing towards improved on and off-site resource condition.	i. Cumulative No. of producers adopting Grain & Graze recommended practices with nrm benefits – <i>attributable to Grain and Graze only</i>	6,800	1,247	Survey B
	ii. % differentiation of practices between participants and non-participants	>50%	24	Survey B
5a. Improved environmental outcomes can be demonstrated on the properties of participating growers.	i. % of case study farms showing improved resource condition	>75%	0	Available documents
5b. Improved environmental outcomes can be demonstrated at the catchment level in Grain & Graze study Regions.	ii. Evidence that G&G practices are contributing positively to catchment conditions	Documented examples	0	Available documents

^a In conducting this triple-bottom-line analysis, the consultants used data from Survey B and the Milestone Reports. 'Not reported' is written along-side each indicator where information is not specifically available from either of these sources to assess this indicator.

4.2 Assessment of the national M&E Plan and TBL by Regions

The Regions provided an assessment of the relevance of the national M&E plan and TBL processes to their Region and an assessment for achievement of economic, NRM and social targets. Table 4.6 shows these assessments for all Regions.

Assessment by Regions is that the relevance is generally moderate or minimal however two Regions considered it to be substantial. Similarly, assessment for achievement of targets was generally low with some exceptions where it was considered to be substantial. The Northern Agriculture Region considered that the relevance of the approach and achievement of targets was substantial for all.

These assessments are subjective estimates derived from workshop processes. The higher estimates of target achievement are generally not substantiated by measured target information although this information is not comprehensive.

Table 4.6 Assessment of national M&E Plan and TBL

	Avon	BR	CWL	CGH	EP	Malle e	MB	N Ag
Relevance of M&E Plan and TBL	1	2	2	3	1	4	1	4
Achievement of economic targets	0	2	1	4	3	1	1	4
Achievement of NRM targets	3	1	1	2	1	3	2	4
Achievement of social targets	1	1	3	3	4	3	2	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete

2. Information from the Murrumbidgee Region not available for analysis.

The Regions generally were not committed to reporting information against targets of the national M&E Plan. Some considered that the reporting framework was cumbersome and even intimidating. Others were reporting M&E under a different framework not related to the G&G information. The Milestone reporting processes did not require that the Regions report clearly according to the M&E Framework.

Evaluation Team assessment

The Evaluation Team finds that the national triple-bottom-line goals, objectives and targets have not been substantially met during the period of investment for the G&G Program.

Assessment of the level of achievement of goals, objectives and targets by Regions is difficult due to information either not being available or not being consistently reported by all Regions.

The assessments made by the Evaluation Team find that 75% of the awareness target, 35% of the participation target and 35% of the adoption target have been achieved during the period of assessment for the Program (i.e. up to June, 2007).

It is recognised that this does not account for program achievement after completion of the Program.

One primary target for profit increase of 10% due to adoption of G&G Program practices has been substantially achieved. The assessment indicates that the level of profit increase is 9%.

With respect to the Objectives of the Program, the TBL analysis presented in this document can establish the following achievement against the Program's objectives.

Objective 1: More profit for mixed enterprise producers (building financial capital)

Grain and Graze has achieved increased profit for mixed enterprise producers, although not to the extent that it had targeted. Profit has increased by almost the targeted amount (9%, where the targeted amount was 10%) but not for as many producers as hoped (1,100, rather than the targeted 6,800). The Program has strong success in generating profitability improvements through improved decision-making relating to current practices (systems-based improvement), rather than through adoption of new practices.

Objective 2: Better water quality and enhanced condition and diversity of plants and wildlife (building natural capital)

Achievement of this Objective cannot be inferred from the TBL Analysis. It is likely that water quality has improved, and the condition and diversity of plants and wildlife enhanced through the adoption of *Grain and Graze* key farm practices with NRM benefits. However, the actual impact of these practices on catchment-scale outcomes is not yet reported by the Regions.

Objective 3: Increased confidence and pride among Australia's mixed enterprise producers (building social capital).

Grain and Graze has achieved increased confidence and pride among Australia's mixed enterprise producers, although not to the extent that it had targeted. Confidence has increased for approximately 3,750 producers, and pride increased by approximately 200 producers, which is considerably less than the target of 6,800 producers. Producers commented that pride is already high, and that the Program did not make a significant difference to improve it further.

The G&G Program was clearly over-ambitious in the achievement of targets at commencement. Some have noted that the achievement targets were initially set for the year 2015 but were contracted to become the achievement targets for the investment period. The Evaluation Team considers that the longer time period would be more realistic for achievement of the targets that were set relevant to that period.

Despite under-achievement of the targets, the Evaluation Team considered that achievements of the G&G Program have been substantial. There has been partial achievement of targeted outcomes and significant achievement of non-targeted

outcomes, including capacity building, collaborative arrangements and adaptation of organisational cultures.

The Program was ambitiously large and complex. The scale and complexity of the Program is appropriate to the issues with mixed farming systems being addressed. The achievements of the Program were substantial especially considering the need to develop operationally within this large and complex Program and considering the impact of the prolonged drought during the period of investment.

Monitoring and Evaluation processes relating to targets and TBL principles have not been well adopted by the Regions or the national research projects.

5.KEQ #3 – Sustained practice change

The third Key Evaluation Question (KEQ#3) for assessment of the *Grain & Graze* Program (G&G) is:

To what extent has the Grain & Graze Program achieved sustained practice change by producers, researchers, research managers and catchment managers?

Collation and analysis of information in response to this question is documented separately in the **KEQ #3 Report**. A set of Key Statements are identified below from the analysis in that report.

Review of key statements

Information to address KEQ#3 was derived from detailed interviews with producers within each Region, workshop processes and semi-structured interviews with the PMC and with Regions.

The assessment for KEQ #3 is focused on the practice change within mixed enterprise farming systems that have been adopted to provide economic, environmental and social outcomes, as well as the processes and factors that determine sustained adoption of practice change. The Evaluation Team considers that the ‘producers, researchers, research managers and catchment managers’ are integral to the processes of adoption. The assessment considers these identified stakeholders as contributors to decision-making capacity within the processes of change.

5.1 Range of sustained practice change

The major practice changes within mixed enterprise farming systems identified by members of PMC as being particularly effective are:

- a) calculating feed supply and demand within farming systems,
- b) grazing cereals to fill feed gaps based on new information that supports practice change decision-making, and
- c) scenario-based analysis of individual farming systems (as demonstrated in the Eyre Peninsula Region).

Table 5.1 provides an assessment made by the PMC on the basis of expectations that measured practice change due to the G&G Program will be maintained or increased after the 5-year investment period. The assessment derived through workshop processes is for substantial sustained practice change however the individual RDC members provided separate assessments that vary considerably.

Table 5.1 PMC assessment of sustained practice change

Evaluation question	W/shop	AWI	GRDC	LWA	MLA
Practice change maintained or increased	4	1	4	3	2

Note: 1. 0=none, 1=minimal, 2=moderate, 3 =significant, 4=substantial, 5=complete

Regions identified the following practices as being most commonly adopted as a result of G&G Program through their respective workshop processes:

- a) information about animal nutrition that leads to decisions about grazing systems and supplementary feeding to stock in containment areas,
- b) Grazing cereals for fill feed gaps,
- c) Soil health practices, including ground cover retention and stock containment to avoid soil structure decline.

Each Region provided three key G&G Program recommended practices relevant to the Regional Success Indicators for their Region. These were used to assess the level of adoption by producers within each Region (Survey B). Some were duplicated across Regions (e.g. cereal grazing was assessed for 5 Regions) however most practices were considered to be relevant to just one Region. There are 20 identified practices in total.

None of the 20 practices are completely attributable to G&G. All have a level of adoption by non-participating producers. However, an increase in the number of producers adopting these practices can be attributable to *Grain and Graze*. Some Regions identified practices (e.g. deferred grazing) that have been relatively commonly adopted in the past.

Table 5.2 provides a summary of the estimated level of adoption for each G&G practice based on extrapolation processes from Survey B information.

The three most commonly adopted practices are grazing cereals, feedlots and containment areas for grazing sheep. Nine practices had only low estimated adoption rates (less than 50 producers adopting). Four practices nominated by Regions had no new adoption as a result of the G&G Program.

Table 5.3 shows that a relatively high proportion of producers participating in the G&G Program are adopting recommended practices other than those identified for assessment by the Regions.

Measurement or other assessment of practice change is based on actual adoption rather than being on the decision processes that may lead to adopting the practice or not adopting the practice. An informed decision to not adopt a practice is as beneficial as an informed decision leading to adoption however it is more difficult to measure or estimate wise non-adoption.

Similarly, some producers may adopt a practice as an on-farm trial then not continue with this practice change based on their own experience. Unsustained adoption occurs quite often, however it is difficult to measure.

Table 5.2 The number of producers within the Regions estimated to be adopting identified *Grain and Graze* practices.

Key Farm Practice	# of farmers adopting - attributable to G&G
Grazing cereals (ha) – 5 Regions	284
Feedlots (head) – 1 Region	269
Containment areas for grazing sheep (head) – 1 Region	243
Fodder budgeting principles (ha) – 1 Region	179
Pasture cropping (ha) – 1 Region	156
Improved measurement of feed in the paddock (%) – 1 Region	123
Improved management of grazing wheats (ha) – 1 Region	112
IPM practices (ha) – 1 Region	111
Assessment of food on offer (ha) – 1 Region	66
Consideration of pasture persistence when selecting pasture species (ha) – 2 Regions	59
Changing enterprise mix to manage drought (ha) – 2 Regions	51
Sowing cereals into existing lucerne stands (ha) – 1 Region	49
Management techniques aimed at improving biodiversity outcomes (ha) – 1 Region	33

Key Farm Practice	# of farmers adopting - attributable to G&G
Alley farming using forage shrubs such as saltbush (ha) – 1 Region	32
Condition scoring (head) – 1 Region	31
Grazing cropping land (ha) – 2 Regions	8
Deferred grazing (ha) – 1 Region	0
Sowing fodder shrubs (ha) – 1 Region	0
Sowing of pastures and forage crops (ha) – 1 Region	0
Subtropical perennial grasses (ha) – 1 Region	0

- Notes:
1. The number of Regions which include each practice as one of their three key farm practices is indicated in column 1.
 2. The number of farmers adopting the farm practices due to *Grain and Graze* may take on zero values if it is estimated that no extra adoption has occurred due to the Program.
 3. The total of column 2 is 1,806, higher than the estimated number of farmers who are adopting *Grain and Graze* farm practices (1,218). This is because some farmers are adopting more than one farm practice.
 4. Note that this table only includes participating farmers within the nine G&G regions. The total number of producers adopting *Grain and Graze* key practices due to the Program is likely to be higher if adopters from outside the Regions are included.

Table 5.3 shows the proportion of participating producers in each Region who have used G&G Program information to not adopt some practices.

Table 5.3 Adoption of other farm practices and adoption prevention

	# of participants adopting other GnG farm practices	% of participants adopting other farm practices	Importance of GnG for other farm practices (1=low, 5=high)	# of participants who did not adopt practices due to GnG	% of participants who did not adopt practices due to GnG	Importance of GnG for adoption prevention (1=low, 5=high)
Avon	1	50	4.0	0	0	n.a.
Border Rivers	6	40	3.7	2	13	3.0
Central West/Lachlan	5	33	4.4	3	20	3.0
Corangamite/G-H	1	11	4.3	0	0	n.a.
Eyre Peninsula	11	58	3.9	5	26	4.4
Mallee	4	40	2.8	2	20	4.0
Maranoa-Balonne	3	33	4.2	2	22	3.7
Murrumbidgee	8	53	4.0	2	13	2.5
Northern Ag	6	50	3.3	2	33	4.0
Average (weighted by number of participants)		42	3.8		21	3.5

The most effective sustained practice changes are those that address identified gaps or opportunities within mixed enterprise farming systems. Table 5.4 provides an assessment of the extent to which the practices being adopted within each Region are addressing identified gaps and opportunities. Four Regions consider this to be occurring at a substantial level. Two Regions considered effective adoptions to be moderate or minimal.

Table 5.4 Assessment of addressing identified gaps and opportunities through the *Grain & Graze* Program.

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Gaps & opportunities	3	2	4	4	3	4	1	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete

2. Information from the Murrumbidgee Region not available for analysis.

5.2 Effective initiatives for sustained practice change

Effective initiatives taken at both national and regional levels were identified from the evaluation processes. The initiatives considered effective by PMC were:

- a) Development of a focus, principles and the required capacity for systems-based mixed enterprise farming systems management,
- b) Enhancing a culture of cooperation,
- c) Progressing a client-based 'Research and Adoption' model,
- d) Increased understanding of people skills and relationships for operation within a collaborative framework,
- e) Clearer understanding of the barriers and success factors for adoption processes.

While none would claim these initiatives to be new, it is the application and development of these initiatives focused on mixed farming systems through the G&G Program that is acclaimed.

The Regions identified a wide range of initiatives leading to adoption that differ between Regions. Three significant initiatives identified were:

- a) Application of an adoption model,
- b) Farm-scale demonstrations, and
- c) Systems-based scenario analysis.

Table 5.5 provides an assessment of the extent to which the Regions considered the initiatives adopted were effective in delivering practice change.

Table 5.5 Regional assessment of the effectiveness of the practice change initiatives in achieving targeted outcomes through the Grain & Graze Program.

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Targeted outcomes	2	2	3	4	3	4	2	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete
 2. Information from the Murrumbidgee Region not available for analysis.

Two Regions (Central West Lachlan and Corangamite Glenelg-Hopkins) made conspicuous their use of the preferred adoption model. The Border Rivers Region is developing an adoption model considered relevant to the NRM Region although differs to the preferred model. Other Regions were following adoption processes less conspicuously. It was not obvious in some Regions that any strategic approach to adoption was being taken. Increased adherence to the preferred adoption model for G&G for all Regions would advance the rate of sustained adoption. Further national level support for this was required.

Without adherence to a strategic approach to adoption, there may be too much effort attributed to achievements in awareness and participate and less effort in the actual processes leading to adoption.

Farm-scale demonstrations were established in all Regions and were generally considered to be very effective in both keeping researchers client-focused and in building confidence in producers about the relevance of information to their own situation.

Systems-based scenario analysis for individual producers as used by the Eyre Peninsula Region was recognised as being effective.

Regions noted the potential to link adoption of practices at a catchment scale although no clear initiatives were identified by more than one Region. The Border Rivers Region has sub-catchment planning and cost-sharing arrangements as a framework for extended adoption. The Central West Lachlan is developing a policy instrument for landscape scale adoption of biodiversity enhancement practices. The Northern Agriculture Region has an incentives scheme for extended adoption that is applied to establishment of perennial pastures. The opportunity for greater linkage between the G&G Program and other Programs, particularly through NRM organisations, for extended adoption of identified practices remains under-utilised.

As important as the individual initiatives for adoption are, it is more significant to consider the suite of initiatives being adopted. Table 3.5 in KEQ #3 Report shows the suite of initiatives taken for each Region. While these will necessarily differ between Regions, it is the extent to which the range of initiatives relate to the strategic adoption model that is important.

5.3 Relevance of Regional Success Indicators

Regional Success Indicators (RSI's) were developed for each Region. The relevance of these to each Region was considered substantial although for two

Regions, they were less relevant. Table 5.6 shows the assessment made by Regions of the relevance of their RSI's.

Table 5.6 Assessment of the relevance of Regional Success Indicators for each Region.

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
RSI's	4	5	4	4	4	2	3	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete
 2. Information from the Murrumbidgee Region not available for analysis.

While relevant in most Regions, it was not obvious that the RSI's were being used effectively to adapt management initiatives within Regions for successful achievement during the period of the investment. In general, the RSI's are not specific, measurable or time-bound (i.e. set for achievement within an identified period) so they provide little or no indication of the level of achievement required to indicate success without being related to Objectives set in Contract arrangements.

5.4 Factors influencing adoption

Both the PMC and Regions identified a wide range of factors influencing the effective adoption of practice change (shown in KEQ #3 Report). The main success factors identified were:

- a) Leadership provided at national and regional levels particularly through the capacity of coordinator roles and their engagement of influential farm leaders,
- b) Prior and existing complementary Programs. Regions where these occurred (e.g. Corangamite Glenelg-Hopkins, Eyre Peninsula, Murrumbidgee, Northern Agriculture) were significantly advantaged by having developed capacity, exiting networks, a research foundation and clarity of issues to be addressed or practices to be adopted,
- c) Supporting science-based evidence of practice change benefits or impacts. The research and demonstration of cereal grazing was effective by supporting management decision-making processes. This has resulted in greater confidence in decisions so that more producers are adopting the practice, and significantly, those producers who had previously adopted the practice are extending or intending to extend their level of adoption,
- d) Engagement both of producers and of partner organisations. This occurred effectively through existing producer networks within Regions (e.g. Corangamite Glenelg-Hopkins and Northern Agriculture) or where State Government agencies have adopted effective consultative processes (e.g. Eyre Peninsula). It is generally observed that engagement has not been effective for G&G Program outcomes through regional NRM organisations.
- e) Systems-based analysis of information. Many respondents noted that most information and activities was dealing with components of systems

and there was insufficient analysis of information relevant to decision-making within whole farming systems.

The national Database project was an initiative with some expectation that this would occur although was not considered to be effective in this way. There was insufficient integration of all national research projects to adequately support this key factor for Program success.

The G&G Program was substantially focussed on increased productivity. The national Economics project identified that there was insufficient consideration of profitability resulting from increased productivity. In addition, there was insufficient consideration of NRM benefits of impacts within systems-based information analysis.

- f) Prolonged drought and the limited time available to achieve adoption are frequently identified as barriers to practice change. While these factors are recognised as significant, they were not prohibitive in progressing some of the success factors listed above.

It is significant to note that some Regions provided only limited insight into their understanding of key success factors and barriers to adoption within their Region. This indicates inadequate strategic development and critical review of adoption processes during the period of investment. Some Regions had this capacity well developed, while other Regions needed support in extension capacity development. This support was not adequately available.

5.5 Momentum for further adoption of sustained practice change

The PMC generally considered that there was adequate momentum in the adoption processes developed through the G&G Program for further practice change to occur over the next 5 year period however some respondents noted that this will require some level of ongoing support. The support required is at least for continuation of the Regional Coordinator roles.

5.6 Achievement of new knowledge to support adoption processes

Many respondents expressed uncertainty about the extent to which the G&G Program was expected to deliver new knowledge through research initiatives. This uncertainty was reflected in Regions by their differing interpretation about their roles in the Program. Some understood their roles were expected to be development of innovative new practices while others understood it to be extension of existing practices.

This difference in Program expectations for new knowledge also reflects differing RDC organisational cultures. Comments from RDC's indicate that this remains unresolved.

The national research projects are evaluated within KEQ #5. It is significant to note here that these projects were initiated after the G&G Program had commenced. The Evaluation Team understands that this occurred when it was

recognised by PMC that the Regions had less research capacity than was anticipated.

Table 5.7 shows the PMC assessment to have been only moderate or minimal achievement of sufficient new knowledge based largely on consideration of the initiative for national research projects. It is recognised that this assessment is substantially subjective.

Table 5.7 PMC assessment of sufficient new knowledge

Evaluation question	All	AWI	GRDC	LWA	MLA
Delivery of sufficient new knowledge	2	1	2	2	0-1

Note: 1. 0=none, 1=minimal, 2=moderate, 3 =significant, 4=substantial, 5=complete

Evaluation Team assessment

There are a large number of farm practices recommended by G&G. These practices have been adopted widely by farmers, but little of this can be directly attributed to G&G. There has been significant adoption of only a small number of effective farm practices. Moreover, none of the G&G key farm practices are new to mixed farming. All have been adopted to some extent by farmers who have not participated in G&G activities. As such, G&G has effectively achieved further adoption of existing practices, more than adoption of new practices.

The most successful adoption was achieved for grazing cereals, with 284 farmers across 5 Regions adopting the practice due to *Grain and Graze*. Grazing cereals is being adopted primarily for production benefit. The second most successful adoption was feedlotting. The practice is being adopted primarily to protect the condition of soil resources.

The increased decision-making capacity of producers about adoption is considered to be as important as the levels of new practice adoption. Some are making informed decisions to increase the extent of a currently adopted practice. Others are making decision to not adopt. This provides benefits attributable to the Program by preventing financial loss (rather than achieving financial gain).

The processes adopted by researchers, research managers and catchment managers were changed through the G&G Program in ways that have supported sustained adoption of farm practices practice within mixed farming systems. The most effective of these has been through development of client-focused research and management and through development of collaborative partnership arrangements.

The most significant missed opportunity for processes leading to sustained practice change is inadequate adoption of a strategic approach (as outlined in the *National Change on Farm Strategy*) and inadequate engagement of NRM organisation initiatives to extend practices at a catchment or landscape scale in most Regions.

It is further noted that the focus of the G&G Program has been on measurement of practice adoption rather than on wise and informed decision-making. In many situations, a decision to not adopt based on information available may be best. This is effective use of information.

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Attribution of practice change to the *G&G* Program is difficult to measure. Regions assessed the level of attribution to the Program to be quite high, however those Regions that have effective adoption also have complementary Programs.

6.KEQ #4 – Return to investment

The fourth Key Evaluation Question (KEQ#4) for assessment of the *Grain & Graze* Program (G&G) is:

What has been the return to investment in the Grain & Graze Program?

Collation and analysis of information in response to this question is documented separately in the **KEQ#4 Report**. A set of Key Statements are identified below from the analysis in that report.

Review of key statements

Four investing partners contributed **\$14.0 million** (in 2007/08 dollars) to the *Grain & Graze* Program for the 5-year period. Table 6.1 shows the relative proportional investment to the Program by each investing partner.

Table 6.1 Investment by partner organisation (%)

Source	Total
MLA	43
AWI	20
GRDC	19
LWA	16
Interest	2
Total	100

Present value (\$, 2007/08): \$13,965,828

Expenditure of investment funding has equated to **\$13.4 million** (in 2007/08 dollars) through five strategies, as shown in Table 6.2. It is significant to note that approximately **61%** of the Program's expenditure is committed to the Regions and **10%** is allocated to Program Support. MLA provided \$388,310 in 2003-2004 to facilitate commencement of the Program (including signing of the regional contract schedules). Approximately 65% of these funds were spent within the Regions, the remaining 35% on Program support. If these funds were not included in the Table 6.2, the allocation of funds to the Regions and Program Support would be 62% and 8%, respectively.

Table 6.2 Program expenditure for the five investment strategies

Investment Strategy	Total (current, \$)	Total (%)
1. Change-on-farm: G&G Focus Regions	8,720,826	61
2. Change-on-farm: National	1,854,249	12
3. Information Management	560,396	4
4. Science Support	1,844,174	13
5. Program Support	1,412,274	10
Total	14,391,918	100

Present value (\$, 2007/08): \$13,390,227

In addition to this direct Program expenditure, there were other direct and in-kind investments made by partner organisations. Non-*Grain & Graze* contributions equated to approximately **\$17.8 million** (2007/2008 dollars) (\$16.7 million from the Regions and \$1.1 million of additional funding for the National Research Projects).

All Program costs, including contributions made by *Grain & Graze* and other organisations, are summarised in Table 6.3. The total investment in the Program was approximately **\$31.2 million**, of which **43%** was contributed by *Grain and Graze*.

Table 6.3 Overall costs for the Program

Investment Strategy	Present Value (\$, 2007/08)
- Change-on-farm: G&G Focus Regions	24,891,123
<i>- Grain and Graze contribution - contracted</i>	<i>7,619,302</i>
<i>- Grain and Graze contribution – non-contracted (e.g. National Forums and Research Panels)</i>	<i>535,681</i>
<i>- Other contributions</i>	<i>16,736,140</i>
- Change-on-farm: National	1,671,137
- Information Management	537,590
- Science Support	2,726,079
<i>- Grain and Graze contribution - contracted</i>	<i>1,405,569</i>
<i>- Grain and Graze contribution – non-contracted</i>	<i>269,393</i>
<i>- Other contributions</i>	<i>1,051,117</i>
- Program Support	1,351,554
Total	31,177,483
- G&G Equity	43%

The estimated benefits of the *Grain and Graze* Program are assumed to be derived solely from perceived increased profitability of farming enterprises of participating farmers. It is acknowledged that the benefits of the Program are much larger in scope (such as culture change and capacity development). Due to the difficulties in putting monetary benefits on these values, the Benefit Cost Analysis focuses solely on the benefits of adoption of *Grain and Graze* farm practices. Additionally, in the absence of information on the actual dollar benefit to the farmer of *Grain and Graze* recommended practices, benefits are based on perceived profitability improvements by survey farmers (see comments on this in Section 9).

A discount rate of 7% is used. The Program benefits are calculated by multiplying the average operating profit per hectare by the average effective farm size for the Region to estimate average operating profit per farm. This average operating profit per farm is multiplied by the average percentage increase in profit due to the Program (generated through Survey B), which is then multiplied by the number of *Grain and Graze* participants in that Region. This provides an estimate

of the increase in operating profit per Region due to *Grain and Graze* over time. The present value of this operating profit per Region is then calculated.

The analysis includes four scenarios:

- **Scenario 1 (standard):** Benefits are assumed to last for a **10-year** period from the start of the Program. The benefits to the producer are assumed to scale up to full benefits in the fifth year (2007/2008), and to remain constant for a further five years. The number of benefiting producers is scaled up to year five and then constant to year ten (2012/2013),
- **Scenario 2 (sustained):** Benefits are assumed to last for a **15-year** period from the start of the Program. The benefits to the producer are assumed to scale up to full benefits in the fifth year (2007/2008), and to remain constant for a further ten years. The number of benefiting producers is scaled up to year five and then constant to year 15 (2017/2018),
- **Scenario 3 (pessimistic):** Benefits are assumed to last for a **10-year** period from the start of the Program. The benefits to the producer are assumed to scale up to full benefits in the fifth year (2007/2008), then scale down to half benefits over the next five years. The number of benefiting producers is scaled up to year five and then constant to year 10 (2012/2013), and
- **Scenario 4 (optimistic):** Benefits are assumed to last for a **15-year** period from the start of the Program. The benefits to the producer are assumed to scale up to full benefits in the fifth year (2007/2008), then to scale up further to 150% at year 10, and then remain constant at 150% to year 15. The number of benefiting producers is scaled up to year five and then constant to year 15 (2017/2018).

The full analysis of the four scenarios is included in KEQ #4 Report. The present value of the benefits of the overall Program for the standard scenario is estimated to be **\$46 million**. The other scenarios show there are significant further benefits to be achieved if adoption can be achieved over a long time horizon (Table 6.4).

Table 6.4 Present Value of the Benefits of the Program (\$, 2007/08)

Scenario	Present Value of Benefits
Scenario 1: Standard	46,055,892
Scenario 2: Sustained	70,667,126
Scenario 3: Pessimistic	38,008,975
Scenario 4: Optimistic	94,182,756

Overall, the Program has been cost-effective (Table 6.5). The **net present value** of the Program (the difference between the present value of the benefits and the

present value of the costs) is estimated to be **\$14.8 million** (the standard scenario). The **benefit cost ratio** of the Program (the ratio of the present value of the benefits and the present value of the costs) is estimated to be **1.48**, indicating that for every dollar spent on the Program there has been a \$1.48 dollar return. The BCR is above 1 even under a pessimistic scenario, indicating the Program is likely to be cost-effective in the medium-term.

Table 6.5 Benefit Cost Analysis Results for the Program

Scenario	Net Present Value (\$, 2007/08)	Benefit Cost Ratio
Scenario 1: Standard	14,878,410	1.48
Scenario 2: Sustained	39,489,643	2.27
Scenario 3: Pessimistic	6,831,492	1.22
Scenario 4: Optimistic	63,005,273	3.02

The Benefit Cost Ratio based on *Grain and Graze* investment only is estimated to be approximately **3.44** (Table 6.6). This is calculated assuming full production benefits. It provides an indication of the value of the Program based on the initial investment, which has acted as a catalyst to lever further funds.

Table 6.6 Benefit Cost Analysis Results for the Program – Grain and Graze investment only

Scenario	Benefit Cost Ratio
Scenario 1: Standard	3.44
Scenario 2: Sustained	5.28
Scenario 3: Pessimistic	2.84
Scenario 4: Optimistic	7.03

There is significant variation in estimated financial success between the Regions. The estimated BCR is relatively low (< 0.85) in 2 Regions, suggesting that investment in these Regions has had a relatively poor return. The BCR's are low in these Regions due to relatively poor estimated participation rates in the Program by farmers, relatively small estimated increases in profit per farmer due to the Program, relatively small number of mixed farms in the Region, and relatively small farm sizes.

The BCR is relatively high (> 2.0) in 3 Regions, suggesting that investment in these Regions has had a relatively good return. The BCR's are high in these Regions due to relatively high participation rates, relatively large perceived

increases in profitability per farmer due to the Program, and relatively high numbers of mixed farms in the Region.

Sensitivity analysis of the key assumptions is presented in Table 6.7. A doubling or halving of any of the four key benefit assumptions (operating profit, effective farm size, % increase in profit due to G&G and percentage of mixed farmers in Region participating in G&G) gives the same BCR response because they are all multiplied together to get the benefits (and the costs remain the same).

Table 6.7 Sensitivity Analysis Results for the Program

Scenario	Net Present Value (\$, 2007/08)	Benefit Cost Ratio
<i>Standard (for comparison)</i>	14,878,410	1.48
Halving any assumption	-8,149,537	0.74
Doubling any assumption	60,934,302	2.95

A subjective estimate of the benefits of each key farm practice (see KEQ#2 Report) for investor outcome is made by the Evaluation Team to estimate the attribution of Program benefits to each Investor (Table 6.8). It is estimated that AWI have received the greatest return to their investment, followed by LWI, MLA and GRDC. It is emphasised that these estimate are very subjective, and as they do not include non-*Grain and Graze* contributions, they should only be used as relative indices of return on investment.

Table 6.8 Benefit Cost Results by Investor

	MLA	AWI	GRDC	LWA
Total investment (\$, 2007/08)	6,059,210	2,794,449	2,668,653	2,137,298
Benefit attribution (%)	34	35	12	19
Benefit attribution (\$, 2007/08)	15,659,003	16,119,562	5,526,707	8,750,620
BCR	2.58	5.77	2.07	4.09

Evaluation Team assessment

The Evaluation Team considers there has been a good return to investment in the *Grain and Graze* Program, especially given the short time-frame. Even under a pessimistic scenario of future benefits, the Program generates a positive return on investment.

A high proportion of funds (61%) were distributed to the nine Regions with the directive that they conduct research to provide new, 'whole farm' knowledge,

tools and capacity to adopt management practices for increased TBL benefit. The Program also had ambitious targets for achieving practice change of these outcomes. It is the Evaluation Team's view that the time frame was too short to achieve significant adoption of new knowledge in most Regions (most adoption was from better decisions regarding established farm practices). It is likely that the benefits of the Program will be achieved over a longer time period, although further investment may be required to ensure that the momentum for adoption is maintained. This could lead to achievement of the targets as they were originally set for the time period up to 2015.

The majority of quantified benefits of the project have been in building on existing knowledge rather creation of new knowledge for adoption of new practices. This is supported by the 9% perceived profit increase by producers participating in G&G activities who are extending the use of currently adopted practices on their properties.

7. KEQ #5 – Program efficiency

The fifth Key Evaluation Question (KEQ#5) for assessment of the *Grain & Graze* Program (G&G) is:

How effective has the design, management and administration of the Grain & Graze Program been?

Collation and analysis of information in response to this question is documented separately in the **KEQ #5 Report**. A set of Key Statements are identified below from the analysis in that report.

Review of key statements

Information to address KEQ#5 was derived from workshop processes, semi-structured interviews with the PMC and with Regions, and semi-structured interviews with the National Operations Team.

7.1 Effectiveness of the Program

Table 7.1 shows the assessments made by PMC about the over-all effectiveness of the design, management and administration of the G&G Program. While this indicates the combined opinion of PMC varied from moderate to substantial (scores 2-4), the individual RDC's that responded assessed the effectiveness as only moderate. All RDC's had two opportunities to assess or revise the effectiveness of the Program design, management and administration.

Table 7.1 PMC assessment of Program design, management and administration.

Evaluation question	W/shop	AWI	GRDC	LWA	MLA
Effectiveness of Program design, management and administration.	2-4	2		2	2

Note: 1. 0=none, 1=minimal, 2=moderate, 3 =significant, 4=substantial, 5=complete

With hindsight in assessment, PMC respondents consider that the Program design has been an appropriate concept for co-investment with a focus on mixed enterprise farming systems building new collaborative partnership arrangements and adding value to existing capacity and networks. In this way, it is considered to have built a foundation for future investment.

PMC recognises some difficulties within its own arrangements as well as with supporting management and administrative arrangements.

The Evaluation Team understands that there was limited team development within the PMC particularly during the early stages which caused some dissention, compromise and resulted in some inflexible guidelines for the Program. The objectives, purpose, values and characteristics of the PMC did eventually prevail in a way that added value to those of individual RDC's. The resulting G&G Program has distinctive characteristics and culture that are identifiable as representing practice change in mixed farming systems of Southern Australia.

The roles of the National Operations Coordinator combined with services provided through the Communications team at various stages has led to organisational team development within the PMC and the identifiable G&G 'brand'.

An initial PMC arrangement was for management expenditure to be limited to 9% of the total RDC investment. This is less than the normally accepted 10% allocation for Program management. The G&G Program evolved to be quite large and complex so the stipulation for management costs to be minimal may have compromised the Program outcomes. The actual expenditure on management for the Program was 8% however if the early (2003-4) Program support contribution made by one RDC is included, the actual expenditure level is 10%.

The part-time role of the National Operations Coordinator was generally considered to have been performed in an efficient and effective way by almost all respondents at national and regional levels. The areas of Program management that the Evaluation Team considers to have been affected by minimised management expenditure are:

- a) Initial strategic development within Regions leading to clarity of purpose and direction, more effective partnership arrangements and more specific contract arrangements, and
- b) Increased coordination, performance and delivery of relevant science-based information from the national research projects and other associated research Programs.

The Program required further capacity and support to the Regions for consistent use of the preferred strategic 'adoption model' and for effective Monitoring and Evaluation processes.

Management of the Program is generally applauded for the cohesiveness developed between those involved. This 'community of G&G' has grown largely as a result of the range of national Forums that have been held.

There was considered to initially be too much separation between the PMC and the Regions resulting in some Regions feeling subservient to and undervalued by the PMC. Formation of the Stakeholder Working Group following the Mid-term review along with PMC visits to Regions reduced the gap. However in some instances, the RDC's are considered to have become too involved in regional operations.

The host administrative organisation is considered to have been effective over-all although many respondents found processes to be slow and burdensome. The high turn-over of Executive Support staff during the investment period is one example of administrative difficulty. Some suggest that administration may have been more efficient undertaken by one of the RDC organisations however this could have led to imbalance in PMC partnership development. Most considered that despite the difficulties, the host arrangements adopted were probably best suited to this developmental stage of the Program.

Administration for the large and complex G&G Program could have had difficulties located in any host organisation. There was clearly a need for performance measurement to apply to both Program administration roles as well as to management roles.

Many evaluation respondents noted that the National Operations Coordinator role should have been attributed with greater powers of delegation including administrative responsibility for staff employed and contracts arranged within the National Operations Team. The Evaluation Team recognises the effectiveness of the National Operation Coordinator role without these delegated powers but appreciates that the role would have been more effective with more direct influence over team members. The role could however have been less efficient with a greater administrative burden.

7.2 Effectiveness of the regional delivery model

A significant initiative of the G&G Program was to deliver Program outcomes through initially 8 but eventually 9 Regions representing a range of mixed farming systems in Southern Australia. The expectation was that benefits that were to accrue to the selected Regions would disseminate to adjacent Regions.

The regional delivery model was also favoured as it provided opportunities to form partnership arrangements with NRM organisations. It also provided the potential to directly partner with other organisations in addition to State Government Agencies within Regions, including producer groups, to administer large-scale Programs.

The PMC required that 66% of all RDC be distributed to the participating Regions. This initial requirement framed the magnitude of the roles that the Regions were expected to take.

Evaluation respondents at the national level generally consider that the regional model remains appropriate, however the selection processes to engage the Regions was deficient. Some Regions responded to the offer to be involved because it was an attractive investment opportunity but were clearly not sufficiently advanced in their understanding of the Program or in their organisational arrangements for effective Program delivery. The Regions were selected following recommendations made by consultants who assessed all regions within the sheep-cereal zone based on potential return to investment. An alternative approach based on tendering processes with criteria set to meet the Program requirements open to all suitable Regions could have been adopted to provide better engagement early in the Program.

Early anticipation of there being adequate capacity existing within the Regions for research and extension processes was unfounded. An initial audit of regional capacity prior to commencement of the Program would have enabled substantially improved Program design and management. Consultants involved in the initial assessment of all regions within the sheep-cereal zone provided an opportunity for assessment of regional capacity.

Not surprisingly, the Regions assessed the regional model to be effective for delivery of Program outcomes. Table 7.2 shows the assessments made by Regions about regional delivery processes. Most considered the processes to be substantially effective.

Table 7.2 Assessment of effectiveness of the regional delivery model.

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Assessment of the regional model	2	4	4	4	4	4	2	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete

2. Information from the Murrumbidgee Region not available for analysis.

The most significant reason for support from the Regions for the regional approach is that the G&G Program was able to be aligned with existing networks and Programs.

A significant limitation to effectiveness of the regional model was due to some contract arrangements. Contract arrangements with State Government agencies within some Regions seemed to be those most in question. While other concerns differed between Regions, they included issues with non-specific partner commitments, unaccountable 'in-kind' contributions, poor performance measures, dominating control by research organisations, separation of service provider and manager roles, and consistency of staff involvement.

The Program needed to account more for regional differences. Some Regions were smaller in area and with less farming system variation than in larger Regions. Travel over long distances both for staff and producers were limitations to management in larger Regions. However issues identified with spatial variation, cross-border management differences and management logistics were not significantly large to deter interest or effectiveness in the Program.

7.3 Effectiveness of regional host organisations

A range of regional host organisations were selected for the G&G Program, including producer organisations (Corangamite Glenelg-Hopkins, Mallee and Murrumbidgee), NRM organisations (Border Rivers and Northern Agriculture) and State Government Agencies (Avon, Central West Lachlan and Maranoa-Balonne). The Eyre Peninsula is formally hosted by the University of Adelaide (for the purposes of potential additional funding) however the functional host has been a State Government agency (SARDI).

Table 7.3 shows the assessment by Regions of their host organisation arrangements. This reflects administrative efficiency more than effective partnership arrangements.

Table 7.3 Assessment of effectiveness host organisations.

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Assessment of host contracting organisation	3	4	4	4	4	3	2	2

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete

2. Information from the Murrumbidgee Region not available for analysis.

There is no clear indication from the Regions of a preference for host agency type. Effectiveness is more dependent upon the pre-existing agency networks with an established history of engagement with producers.

The capacity of staff in the host organisation and their financial contribution to the Program area were also considered to be significant to their effectiveness.

7.4 Effectiveness of National Operations Team support

Assessment of the effectiveness of the National Operations Team at the national level is included in section 7.1. The effectiveness of its support for the Regions was assessed for each Region. Table 7.4 shows the varied ranging assessment for the effectiveness of their support.

Table 7.4 Assessment of effectiveness National Operations Team support

	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Assessment of national Operations Team support	2	4	4	2	1	1	1	3

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete
 2. Information from the Murrumbidgee Region not available for analysis.

Only three Regions considered that they had significant (score of 3) or better support from the National Operations Team for their delivery of outcomes. In some cases, the response was scored low as the Regions considered that they did not need a high level of assistance.

The main reasons provided for the National Operations Team being less effective than required was due to the need for continuity of messages (about purpose and direction of the Program) from PMC. While the National Operating Team contends that the messages were consistent and that some Regions took time to fully understand them, the Regions considered that communications about these important strategic directions were poor.

Some Regions felt that components of the Program were imposed without adequate consideration of existing regional capacity. Some Case Studies undertaken by the Social project were not well negotiated and missed opportunities to support those being developed by Regions. Biodiversity initiatives were considered to be imposed at a level that was incompatible with some existing regional biodiversity initiatives.

One regional respondent noted that their Steering Committee wanted to deal with just one project component at a time for which they wanted national support but felt overwhelmed by the imposition of many project components. There was considered to be inadequate understanding developed between the Region and the National Operating Team by this respondent. Some Regions were primarily seeking additional capacity for delivery on their own Programs while the G&G Program was seeking partnership arrangements to deliver according to targeted investment outcomes under contract arrangements.

There were also concerns about inadequate support for Monitoring and Evaluation (M&E) in most Regions. A review of regional M&E processes undertaken by the Evaluation Team shows there to have been minimal adoption of M&E by most Regions. There was also limited consistency of processes between Regions. No Regions were monitoring in relation to their Regional Success Indicators or using M&E information to adapt management during the investment period.

Reporting against the national M&E framework was considered difficult and not performed well. There was a need for greater National Operations Team support with M&E in the Regions to ensure understanding of what was required and consistency in the approach adopted.

Some Regions considered that they received effective support for adoption of the 'Change on Farm' strategy, however general observations are that most Regions did not adequately follow the preferred practice change model.

7.5 Success factors and limitations to Program efficiency

The most significant factor within the Program influencing efficiency has been the capacity of the people involved. Many respondents mention the passion and commitment of the people involved at both national and regional levels. The Coordinator roles were mostly performed with energy and commitment beyond normal expectations of their duties. This approach was important to the successful engagement of partner organisations and producer interest. The national Biodiversity project grew larger than was initially expected but provided effective delivery of information through the level of commitment by national project staff.

The capacity of people involved is also identified as a limitation to the efficiency of the Program. Expectations that the Regions would have adequate capacity to undertake a research and extension Program in systems-based management were not able to be met. The complexity for the Program being delivered needed a high level of systems-based capacity that was not adequately available or engaged by the Program.

The effectiveness of regional Program delivery was also substantially influenced by the efficiency of Steering Committees. Most were well organised and effective; others were limited by poor strategic direction, unclear contract arrangements or internal conflict.

People in regions with high level systems-based management capacity are employed in both State Government agencies and farm consulting organisations. Where State Government Agencies appointed appropriate staff for the duration of the G&G Program, the outcomes were effective. Some agencies appointed inappropriate staff at minimal levels (some as low as 0.1 FTE) and with high staff turn-over. It is important that appropriate staff members who are committed to the interests of the Program are appointed for the term of the investment period.

Farm consultants were initially not well engaged within Regions through the G&G Program. There was some partner resistance to their engagement in some Regions. However, most farm consultants are dealing continuously with systems-based decision-making processes for their clients. They deal with individual producers and occasionally with small groups. Their skills include scenario-based analysis of farming system options. Their clients pay for their knowledge and advice, and so they are well engaged for recommended changes. Many farm consultants are actively involved in field trial design and assessment.

Farm consultants interviewed by the Evaluation Team recognised that the G&G Program was meeting the information needs in an important area for mixed

enterprise farming and, once engaged, were generally very enthusiastic about being involved.

It is estimated by farm consultants that some Regions have more than 50%, and most Regions have more than 20%, of all commercial mixed enterprise farmers who engage the professional services of an adviser. This opportunity for effective producer engagement processes through farm consultant networks was missed in most Regions during the early stages of the Program. At least two regions had only preliminary engagement of farm consultants at the time of the final Program evaluation.

7.6 Effectiveness of national research Programs

The five national research projects were initiated after commencement of the G&G Program. The Evaluation Team understands that their primary purpose was to address the regional capacity gap for research. The researchable questions developed for each of the five projects were to address national-scale issues (i.e. they were not expected to respond to separate regional-scale issues) however there was an expectation by the regions that each of the projects would provide support for regional delivery processes.

Table 7.5 shows assessments made by Regions about the effectiveness of support they received for each of the national research projects. Most were clearly disappointed in the support that they received.

Table 7.5 Regional assessment of the Biodiversity research project.

National Research Project	Avon	BR	CWL	CGH	EP	Mallee	MB	N Ag
Biodiversity	3	3	1	1	3	2	2	3
Database	2	3	2	0	0	1	0	2
Economics	0	0	3	0	1	1	0	1
Feed base	2	3	0	0	0	0	1	4
Social	0	1	3	2	3	3	1	4

Note: 1. 0=none, 1=minimal, 2=moderate, 3=significant, 4=substantial, 5=complete

2. Information from the Murrumbidgee Region not available for analysis.

Biodiversity project

The national Biodiversity research project was considered by those directly involved to be over-ambitious and was not well estimated (time, costs, capacity) at commencement. Contract arrangements were made without adequate review to ensure effective delivery of expected outcomes within the investment period.

The project was not seen as hypothesis-based research but was instead expected to show biodiversity as being a part of farming systems rather than being relegated to remnants or off-site locations. It was to build a clear 'story' about what biodiversity within a farming system might look like.

The effectiveness of the Program in the Regions was dependent upon the skills and capacity that were made available. Only two Regions employed people with appropriate ecological survey skills.

The three National Forums (Wagga Wagga in 2006, Hobart in 2007 and the Farmer Forum early in 2008) and other similar initiatives were considered significant in engaging regional interest in the project. There was considerable effort from within the project to engage with the Regions. Some of the Regions did not want the project and most did not initially understand it.

The project leader considered that there was a very low allocation of operational expenditure for each Region and property. This, combined with some poor site location, inconsistent information collation, high staff turn-over, lack of initiative and drought impacts limited the effectiveness of the project within Regions.

The project was ambitious by undertaking consistent survey actions on a range of mixed enterprise farms across Australia. It is claimed to be the largest biodiversity project undertaken on farms in Australia. The project is considered to have worked effectively as 'community science' more than being traditional research. It was considered that many people contributed and all learnt from the project. While the project was largely developmental, it has been effective in engaging strong interest particularly by those involved in the 47 demonstration properties and is providing new science-based information. The effectiveness of the project was recognised by becoming a winner of the coveted *Banksia Land and Biodiversity Award* in 2008.

Database project

The national Database project was undertaken by an organisation with a high level of relevant skills and experience and substantial computational capacity able to accommodate all of G&G information sets.

The expectations of the project were to develop a database to meet Program needs and suitable for Program use. The project was also expected to provide data management support to Regions.

The project has recently obtained some information from a few Regions and national research projects however this is not comprehensive.

Limitations to effectiveness of the project are considered to have been insufficient resources (\$120,000 over 3 years), late engagement with Regions and other projects, information ownership issues, concerns about information duplication and limited capacity within the Program for data management.

Although the need for information management was recognised early in development of the Program, there was further limited by the project not being approved for commencement until the third year of the program.

Regions consider that they were not contracted to supply information into the national database and most had arrangements with other organisations for data management. There was a general sense that information was being contributed upwards to meet the needs of the database but there was no feedback or support to assist the Regions.

Economics project

The national Economics project was expected to research the relationship between resilience of farming businesses and enterprise mix in different Regions. The scope of 'resilience' includes profit, risk and sustainability.

While this was a national scale project, it was expected to significantly engage with the Regions through workshop processes, reporting and support. The project was limited to 5 Regions (Border Rivers, Central West Lachlan, Murrumbidgee, Corangamite Glenelg-Hopkins and Eyre Peninsula).

Table 7.5 shows that only one Region assessed there to be significant benefit from the project. Beneficial results from the project are not yet considered obvious at a national level.

Economic analysis needs to be completed early in the Program so it can influence research and extension activities of the Regions. There needed to be considerably more engagement with the Regions.

The Regions identified that economic assessment was an important component of the Program. Some identified adequate capacity for economics within State Government agencies although this capacity was not effectively engaged by the Regions.

The expectations of the Regions may have been too high for the operational capacity of the national Economics project. However, engagement at any level by this project has been of limited benefit to the G&G Program.

Feed base project

The national Feed-base project was undertaken by a team from CSIRO with a high level of research experience in systems-based modelling combining both grazing and cropping systems. This project was applied to 5 Regions (Avon, Corangamite/Glenelg-Hopkins, Maranoa-Balonne/Border Rivers, Murrumbidgee, Northern Agriculture).

The key role was to answer a national question about mixed farming systems with science-based capacity:

How can improved feed base utilisation and distribution contribute to reduced business risk and improve NRM outcomes?

Outputs expected were:

- Options to change feed base supply,
- An audit of feed base systems components,
- Models and systems analysis,
- Extrapolation across all 9 Regions, and
- Interactions with other national projects to achieve TBL outcomes.

New knowledge was to be focussed on grazing cereals as a new national feed base option including feed base management tactics and strategies considering seasonable variation and geographic difference. The project was expected to integrate with economics, social, NRM and risk management issues.

The feed-base audit was not as comprehensive as first expected. The effectiveness of the project in the Regions was very dependent upon the people involved (Regions, other projects and this project). This was variable between Regions.

The project did link with the national Economics project and partially with the Social project.

Most Regions found this project to be of limited benefit which is surprising because it is focused on the most commonly adopted practice change (cereal grazing to address a feed gap). The Regions seemed to have expecting more pro-active support for their own purposes and have missed the opportunity to engage with seemingly relevant research capacity.

Social project

The national Social project was undertaken by an organisation with recognised capacity for social research processes. The researchable question was:

What understanding of the social dimensions of dealing with complexity associated with mixed farming can enhance the adoption of Grain and Graze project results?

Expectations of the project were for:

- Increased adoption of sustainable mixed farming systems,
- New models for understanding mixed farming and making decisions, and
- A new language to discuss and debate issues relating to mixed farming systems

The Project has developed a language that has been adopted to some extent across all Regions. Regional Coordinators and other personal have a much stronger understanding of the social issues affecting adoption of mixed farming systems.

Most Regions considered that they derived significant benefits from involvement with this project. They are able to identify the effective events undertaken by the Project Leader more than they can identify the actual benefits derived.

It was generally recognised that the effectiveness of this project was dependent upon the skills on those involved and that there were limits to the extent to which this capacity could be utilised within each Region.

The national Social project is recognised for identifying lifestyle factors for consideration within farming systems and for extending the concepts of communication through local case study stories.

It should be recognised however that the effectiveness of the project has been in identifying how farmers make decisions and communicate. This is of benefit to those who work with farmers but not necessarily to farmers. They, and their farm advisers, know well how they decide and communicate.

Evaluation Team assessment

The Evaluation Team finds that considering the ambitious scale and complexity of the G&G Program and some adverse conditions (especially the prolonged drought), the Program design, management and administration have been very effective in delivering expected and unintended outcomes of the Program.

Most involved consider that the delivery model was of appropriate scale and complexity to deliver the outcomes required with the exception of the effectiveness of some national research projects. While there are quite a few changes suggested for similar future investment, the foundations and collaborative cultures established for co-investment in mixed enterprise farming systems through the G&G Program are suitable and appropriate for the purpose. The Evaluation Team supports this position.

Many operational problems identified were addressed and resolved during the course of the Program. Other deficiencies are now well recognised and alternative strategies can be adopted in future Programs.

Differences are noted between Regions for their capacity to deliver outcomes of the Program. However it is important to recognise that each Region started at a different position within the complex conceptual cycle of adoption. Inadequate application of a strategic approach to adoption within each Region and inadequate Program monitoring caused there to be a level of failure in adaptive management processes both at a national level and within Regions.

There was an almost competitive process between Regions to demonstrate a high level of participation but there was a more limited focus on understanding and applying processes for sustained adoption. The links between participation and adoption are apparent when the outcome is economic but less apparent for environmental and other social outcomes.

The most efficient delivery processes have occurred where the Regional Coordinator, the Steering Committee and partner organisations have a well developed understanding of these adoption processes appropriate to their Region.

A deficiency in the Program has been with the national research projects. The Evaluation Team considers that the set of 5 national research projects was well selected. Each project is addressing an important knowledge gap for the G&G Program. There are additional gap areas that could have been addressed, particularly for assessment of NRM benefits or impacts, however the priority for those initiated is appropriate.

The Evaluation Team also considers that the research capacity engaged through the national research projects was of very high calibre both in the professional people involved and their supporting facilities. Most people involved are national leaders in their field of expertise. It is then surprising that this capacity has not adequately aligned with the needs of the Program during the investment period.

The Regions are generally disappointed with the support received from the national research projects. Discussion in Section 5.6 indicates that the PMC are also disappointed at the level of new knowledge generated by the Program. The National Operations Team identifies useful contributions from some projects, including information and engagement as a result of the Biodiversity project and additional insights for decision-making by the Social project. The general national

expectation is that these projects generated significant information to assist mixed farming systems into the future, but are yet to yield their full beneficial outcomes. This is because much of the research was delivered at the conclusion of the project, too late to be included in the Program's extension activities, and there was little support provided to adapt research findings into a format readily understandable by extension officers and farmers.

The reasons for this one significant deficiency in the Program design, management and administration are not clear. The purpose for each project seems to be clearly stated. The resources available to deliver each project, while probably inadequate for some projects, were adequate to meet some of the expected project outcomes. Some projects were able to negotiate expected deliverable according to resources available so the Program is demonstrated to have had adequate flexibility.

Project leaders note that some of their attempts to engage with Regions were ineffective due in part to the Regions having inadequate capacity and understanding to adopt the opportunities available. Regions were expecting more direct support for their own specific regional needs. As a result, effective engagement resulting in substantial new knowledge to influence adoption of sustained practice change did not occur.

The Biodiversity, Economics and Social projects did engage at some level with Regions however Project Leaders for all of these projects would recognise limitations to their influence.

Each of the Project Leaders was relatively unconstrained to perform the tasks of their project. The deficiency that has occurred is most likely to be due to inadequate coordination in re-aligning these projects according to expectations and in arranging integrating between projects and with the Regions. This coordination role exceeded the capacity of the National Operations Team.

The Evaluation Team considers that early engagement of a science-based coordinator during the investment period would have substantially added value to the very high capacity but under-utilised research component of the G&G Program.

8. Key Evaluation Findings

8.1 Key Evaluation Findings Relating to KEQ#1

1. The needs of key stakeholders have been adequately although completely met. A few large successes (both intentional and unintentional), may rationalise the Program in the face of identified deficiencies. The G&G Program has achieved sufficient large successes in practice adoption, partnership development and capacity-building to have adequately met key stakeholder expectations at both national and regional levels of the Program.
2. There has been moderate perceived achievement of stakeholder expectations by the PMC, and strong perceived achievement of stakeholder expectations by the Regions (these perceptions were measured before quantitative triple-bottom-line findings of this Evaluation were released). Where expectations are focussed on individual stakeholders, the Program achieved moderate success. Where expectations are focussed on development of a Program model for delivering long-term practice change benefits, the Program achieved good success.
3. Major limiting factors to achieving stakeholder expectations were identified as the short amount of time to deliver the Program and the prolonged drought.
4. It is the Evaluation Teams' assessment that the key factors that limited achievement of stakeholder expectations were:
 - Clarification of stakeholder needs early in the Program for some regions (a pre-requisite for a client-focused approach to systems-based management), and
 - Appointment and retention of staff with adequate capacity and experience to develop and deliver substantial systems-based practice change outcomes within relatively complex systems,
5. Major successes in achieving stakeholder expectations were:
 - Provision of new knowledge about livestock in mixed farming systems (information gaps were well targeted),
 - The high level of community engagement, and
 - The general effectiveness of project coordination and management.

8.2 Key Evaluation Findings Relating to KEQ# 2

1. The national triple-bottom-line goals, objectives and targets have not been substantially although not completely met during the period of investment for the G&G Program, however the levels of achievement towards the targeted outcomes are substantial. One primary target for profit increase of 10% per participating producer has been substantially achieved (achieved increase was 9%).
2. The assessments made by the Evaluation Team find that approximately 75% of the awareness target, 35% of the participation target and 35% of the adoption target have been achieved during the period of the Program.
3. Assessment of achievement of goals, objectives and targets by Regions is difficult due to information either not being available or not being consistently reported by all Regions. Monitoring and Evaluation processes relating to TBL principles have not been well adopted by the Regions or the national research projects.

4. With respect to the achievement of the Program Objectives:

- *Objective 1: More profit for mixed enterprise producers (building financial capital)*

Grain and Graze has achieved increased profit for mixed enterprise producers, although not to the extent that it had targeted. Profit has increased by almost the targeted amount (9%, where the targeted amount was 10%) but not for as many producers as hoped (1,100, rather than the targeted 6,800). The Program has strong success in generating profitability improvements through improved decision-making relating to current practices (systems-based improvement), rather than through practice change.

- *Objective 2: Better water quality and enhanced condition and diversity of plants and wildlife (building natural capital)*

Achievement of this Objective cannot be inferred from the TBL Analysis. It is likely that water quality has improved, and the condition and diversity of plants and wildlife enhanced, through the adoption of *Grain and Graze* key farm practices with NRM benefits. However, the actual impact of these practices on catchment-scale outcomes is not reported by the Regions.

- *Objective 3: Increased confidence and pride among Australia's mixed enterprise producers (building social capital).*

Grain and Graze has achieved increased confidence and pride among Australia's mixed enterprise producers, although not to the extent that it had targeted. Confidence has increased for approximately 3,750 producers, and pride increased by approximately 200 producers, less than the targeted 6,800 producers.

5. The G&G Program was clearly over-ambitious in the achievement of targets at commencement. Despite this, the achievements of the G&G Program have been substantial. There has been progress towards the achievement of targeted outcomes and significant achievement of non-targeted outcomes, including capacity building, collaborative arrangements and adaptation of organisational cultures.

8.3 Key Evaluation Findings Relating to KEQ#3

1. A wide variety of farm practices have been extended by the G&G Program. However, only a small number of these practices have seen significantly adopted due to the Program,
2. The most successful adoption rates were for grazing cereals, with approximately 285 farmers across all Regions adopting the practice due to *Grain and Graze*. This practice is being adopted primarily for production benefit. The second most successful adoption was for feedlots. The practice is primarily being adopted primarily to protect the condition of soil resources.
3. It is significant to note that analysis of the producer survey information shows that the G&G Program has added most value by producers making better decisions about their current practices rather than by adopting new practices. The increased decision-making capacity of producers about adoption is considered to be as important as the levels of new practice adoption. Some farmers are making informed decisions to increase the extent of a currently adopted practice. Others are making decisions to not adopt. This provides benefits attributable to the Program by preventing financial loss (rather than achieving financial gain),
4. The most significant missed opportunities for processes leading to sustained practice adoption are by inadequate use of a strategic approach (as outlined in the *National Change on Farm Strategy*) and inadequate engagement of NRM organisation initiatives to extend practices at a catchment or landscape scale,
5. The G&G Program is largely accredited with adding capacity and information to build greater confidences in decision-making for adoption. In many ways, the influence of the Program was by being catalytic. The Evaluation Team considers that the Program was very effective in most Regions in this way without there being clear attribution to the Program,
6. Assessing the extent to which sustained practice change has been achieved by the G&G Program is difficult without suitable benchmark information being available prior to commencement of the Program. The initiative by the Program to develop benchmarks for each Region was not effective because the information provided is not relevant at the scale at which it needed to be measured. Regional-scale information was provided where individual farm scale practice information was required,
7. The Regional Success Indicators for each Region were set to provide a forward estimate of successful achievement of practice change. While they are quite relevant to intended practice change in most Regions, they

are not measurable in a time-bound way and are not related to benchmark information.

8.4 Key Evaluation Findings Relating to KEQ#4

1. Direct *Grain and Graze* investment is approximately \$14 million, 61% of which was distributed to the Regions and 10% to Program Support. A further \$18million was contributed from collaborating institutions. *Grain and Graze* provided 43% of total investment,
2. The present value of the benefits to farmers from the Program is estimated to be approximately \$46 million. There are significant unexpected and intangible benefits derived from the Program which are not included in this value,
3. The Net Present Value of the Program is estimated to be approximately \$15 million, and the BCR is estimated to be 1.48. Even under a pessimistic scenario of future benefits, the BCR is still greater than 1 suggesting that the Program has been cost-effective. The BCR of *Grain and Graze* investment only is approximately 3.4 (this includes all estimated benefits derived from the Program, but only the investment provided by *Grain and Graze*),
4. There is significant variation in benefits achieved by each Region, depending on participation rates in the Program, perceived increases in profitability of farmers involved in the Program and the size and number of farmers within each Region,
5. Overall, there has been a good return to investment in the Program. Most benefits of the Program are yet to come.

8.5 Key Evaluation Findings Relating to KEQ#5

1. Considering the ambitious scale and complexity of the Program and some adverse conditions (especially the prolonged drought), the Program design and management administration have been very effective in delivering expected and unintended outcomes of the Program,
2. The regional delivery model was of appropriate scale and complexity to deliver the outcomes required,
3. The operational problems were generally identified and adequately addressed during the course of the Program,
4. Inadequate application of a strategic approach to adoption within each Region, and inadequate Program monitoring caused a level of failure in adaptive management processes at the national and regional levels,
5. The links between participation and adoption are apparent when the outcome is economic but less apparent for environmental and other social outcomes. As a result, the Program has been more efficient in delivering measurable production-based practice change than change for natural resource condition outcomes.

6. It is estimated by farm consultants that some Regions have more than 50% and most Regions have more than 20% of all commercial mixed enterprise farmers who engage the professional services of an adviser. This opportunity for effective producer engagement processes through farm consultant networks was missed in most Regions.
7. One identified weakness in delivery of the Program was associated with the National Research Projects. The Evaluation Team considers that the research capacity engaged through the national research projects was of very high calibre both in the professional people involved and their supporting facilities. Most people involved are national leaders in their field of expertise. Effective engagement resulting in substantial new knowledge to influence adoption of sustained practice change did not occur. The reasons for this are unclear, although are likely to be due to inadequate coordination in re-aligning projects according to expectations and in arranging integration between projects and with the Regions. This coordination role exceeded the capacity of the National Operations Team.

9. Evaluation Process Review

Overall, the Evaluation Team considers that Evaluation Process to have been effective in delivering quality and relevant quantitative and qualitative analysis for Program Evaluation. A review of the strength and weaknesses of the Evaluation Process is provided below under the following subheadings:

- Engagement with regional and national stakeholders,
- Benchmarking processes,
- Regional and national monitoring and evaluation efforts, and
- Estimating the quantitative benefits of the Program.

Engagement with regional and national stakeholders

Workshop processes were undertaken with each of the Regions as a significant evaluation process in Survey A. The processes were very effective for seven of the Regions. The workshop process for the Corangamite Glenelg-Hopkins Regions was not well attended and was incomplete on the day. Responses for completion were made by the Coordinator on behalf of the Steering Committee. The workshop for the Murrumbidgee Regions was not well attended and there was no information made available following the workshop. Hence, while processes were put in place to collect the required information until late in the Evaluation, data gaps remain.

A workshop was also conducted with the Project Management Committee as a part of the evaluation process in Survey E. This Workshop was followed-up with phone interviews with producer representatives of RDC's.

Engagement with the National Research Project Leaders and National Operations Team was effectively facilitated through phone interview.

A total of 199 phone interviews were made with farmers for Survey B (Table 9.1). Conducting these interviews proved to be far more arduous than expected. It is estimated that an average of 15 calls were made for every questionnaire administered. Unsuccessful phone calls can be attributed to farmers not being willing to participate, not being mixed-farmers or not being available. Fewer than anticipated farmers who had participated in *Grain and Graze* activities were surveyed. Each Region was asked to provide at least 20 participant names and contact details. Some Regions did not provide this number. One Region provided a large list of participants, but on making the calls, none of those farmers had actually participated (it is likely that the list provided was a contact list for inviting farmers to events, rather than a contact list for those who had participated). The limited survey size means that while the number of participants adopting *Grain and Graze* key farm practices can be estimated with some confidence, the level to which participants are adopting the different key practices (i.e. number of hectares of grazing cereals) could not be confidently estimated.

Table 9.1 Statistics on Survey B Sample Size

Region	# of farmers surveyed	# of targeted participants	# of farmers selected randomly from within the Region	# of farmers selected randomly from neighbouring Regions
Total	199	109	49	41
Avon	14	6	3	5
Border Rivers	25	15	5	5
Central West/Lachlan	30	15	10	5
Corangamite Glenelg Hopkins	22	11	6	5
Eyre Peninsula	25	15	5	5
Mallee	20	10	5	5
Maranoa Balonne	21	10	7	4
Murrumbidgee	25	15	5	5
Northern Ag	17	12	3	2

Farmer surveys are likely to become more and more difficult to administer, as the numbers of surveys in which farmers are asked to participate is increasing leading to survey-fatigue. The Evaluation Team considers that a more effective way of eliciting the required information would be to select a group of farmers at the start of the Program and pay for their time to participate in a survey at the beginning, mid-point and commencement at the Program. It would be important to select a sufficient number of farmers to include some that participate in the Program and some that don't. This would ensure that farmers provide thoughtful insights throughout the duration of the Program.

Benchmarking Processes

The Benchmarking Report that was prepared at the commencement of the Program, was very broad in terms of scale and scope. The information may have been used by other stakeholders of the Program, but it was too broad for the needs of this Evaluation. The Evaluation Team recommends that a focus for future programs should be for provision of suitable benchmark information for selected indicators. This information would provide the basis of the *Monitoring and Evaluation Plan*. Given that significant time and funds for this National Evaluation was spent on information collection, Program Evaluation would be a

relatively simple process if accurate and targeting benchmark information were available.

Regional and national monitoring and evaluation efforts

The Evaluation Team considers that the *Grain and Graze Monitoring and Evaluation Plan* provides a comprehensive framework for outlining the Program's intended goals, thereby providing strategic direction for the Program participants. It also provided a comprehensive framework for quantitative Program Evaluation.

The Evaluation Team also considers that by not linking the M&E Plan directly to the Milestone and Final Reports, the opportunity for efficient evaluation was missed. There could have been a minimum requirement for awareness, participation and adoption-based indicators to be measured throughout the period of the Program. Without this information being provided consistently during the Program, the effectiveness of adaptive management processes within the Program were limited.

Estimating the quantitative benefits of the Program

The quantitative benefits of the Program were difficult to assess. The Benefit Cost Analysis conducted before the commencement of the Program assumed the benefits would result from bringing forward (in time) the productivity and other gains that were expected to emerge from other ongoing research programs in various research and development corporations.

The Benefit Cost Analysis conducted for this Evaluation is based on perceived increase in profitability to each farmer from their association with the Program. Information was sought from each Region and the National Economics Project to put dollar estimates of the benefit per hectare to the farmer for adoption of *Grain and Graze* practices. It was found that this information was not available for any Region. Instead, the benefits were estimated by asking farmers the percentage increase in their profitability due to their involvement in the Program. As many non-participating farmers were found to be adopting *Grain and Graze* recommended practices, these benefits were only attributed to the Program for a percentage of participants (the differential in percentage between participants and non-participants of the Program). As such, the benefits are only perceived benefits of the Program, rather than actual benefits.