Indicators for Triple Bottom Line Benchmarking of GRDC Farming Systems Projects

Prepared for

Grains Research & Development Corporation

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## Abbreviations and Acronyms

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ABARE</td>
<td>Australian Bureau of Agricultural and Resource Economics</td>
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<tr>
<td>FBP</td>
<td>Farm Business Profit</td>
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<tr>
<td>GRDC</td>
<td>Grains Research &amp; Development Corporation</td>
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<tr>
<td>PMP</td>
<td>Property Management Plan</td>
</tr>
<tr>
<td>ROC</td>
<td>Return on Capital</td>
</tr>
<tr>
<td>TBL</td>
<td>Triple Bottom Line</td>
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</table>
1 INTRODUCTION

There is an increasing expectation that reporting systems track performance across a Triple Bottom Line (TBL). This expectation is a consequence of a growing view that environmental and social issues are equally as important as financial returns in assessing the impacts and returns from research and development programs in terms of sustainability.

GRDC’s Validation and Integration Program aims to develop sustainable farming systems adapted to each of the industry's agro-ecological regions that are responsive to grower, community and catchment needs. The TBL indicators developed by Hassall & Associates for GRDC will be available to grower groups and other implementing agencies to assist them in tracking change and progress towards sustainability.

With a diverse range of farming systems, projects and participants across Australia, TBL indicators for the Farming Systems Projects will need to monitor lasting changes over time, despite the impacts of fluctuations in season, commodity prices, financial markets and other projects on performance.

This report outlines a small suite of nine TBL indicators that can be used to monitor changes associated with the Farming Systems Projects. The indicators operate at a farm scale in order to allow impacts to be assessed at a property level and comparisons made between farms and regions.

The indicators assist participants in the Farming Systems Projects to:

- Establish the basis for targets and goals when developing Farming Systems Projects;
- Manage and evaluate the impact and outcomes of projects and practices; and
- Report performance of the Farming Systems Projects as a national program.
The nine indicators recommended for evaluating the impact of the Farming Systems Projects across the TBL are set out in Table 1. For each indicator a brief explanation of the indicator, its strengths, weaknesses, comparability and recommended methods for estimation is provided.

Table 1   Recommended TBL indicators for the Farming Systems Projects

<table>
<thead>
<tr>
<th>Financial</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Farm business profit</td>
<td>1. Participation</td>
<td>1. Groundcover</td>
</tr>
<tr>
<td>2. Gross margins</td>
<td>2. Capacity</td>
<td>2. Integration of environmental issues into on-farm decision-making</td>
</tr>
</tbody>
</table>

The suite of indicators was chosen through a review of existing TBL reporting frameworks, and consultation with some of the current Grower Groups, Farming Systems Group managers and selected experts. The key criteria were relevance and practicality.

The suite represents a starting point for the Farming Systems Projects to commence TBL reporting. Hassall & Associates recommend that GRDC and the Farming System Groups trial the suite in order to test and refine the indicators and develop a consistent approach across the program.
Suggested indicators to measure financial health are:
- Farm business profit;
- Gross margins or activity analysis; and
- Return on capital.

The inclusion of financial indicators into a TBL framework does not reduce the importance of technical rigour when choosing and calculating these financial assessments. These measures have a technical underpinning and a history of general acceptance as indicators of the financial status of farm businesses.

Financial indicators will provide a measure of the on-farm costs and benefits associated with the actions undertaken in the Farming Systems Projects. This information, at the very least, will affect adoption of new practices or technologies.

The ultimate financial measure of a farm business is profit over time. Costs analysis, partial budgets, examination of yields and enterprise gross margin analysis all have roles, however all may provide misleading information on underlying profitability. For example, the capital and potentially significant adoption costs can be unaccounted using some of these partial indicators. Examples of measures that assess the current status of profitability are change in equity and return on capital.

### 3.1 Farm Business Profit

Farm Business Profit (FBP) provides a measure of profitability over time and represents the farm cash funds available for investment and consumption after paying for all costs of production and changes in inventories and depreciation.

\[
\text{Farm Business Profit} = \frac{\text{Total Revenues} - \text{Total cash costs (materials, services & hired labour)}}{+ \text{Changes in trading stock} - \text{Depreciation} - \text{Imputed labour costs}}
\]

This measure does not include interest costs, or other payments including non-farm income. However, the labour costs of family labour (imputed labour costs) are accounted for.
Data collection:

Estimation of FBP will require surveying in some form. For example, the ABARE survey process includes on-farm interviews. After initial definition and establishment of data collection methods, on-going collection of data could be carried out by mail or telephone surveys. Many farm management consultants have experience in calculating farm profit and could assist Farm Systems Groups to establish a system of ongoing collection and analysis if required.

It is possible that a representative farm or real farm case studies could be developed to examine the impact of adoption of practices given observed impacts on farming systems to minimise costs.

Strengths:

FBP is collected by ABARE in their annual farm surveys and it is an accepted measure of financial performance. These data have been collected since 1977-78 for broadacre and dairy industries (Nelson, 2004). The calculation of FBP enables further detailed assessment of financial sustainability over time for farm operators. Disposable income per household, equity and return on capital are all measures that can assist farm management and, depending on individual circumstance, are based on FBP.

Examination of FBP ensures that assessment of costs and benefits of adoption of practices are examined.

Weaknesses:

The FBP alone does not assess the financial feasibility of an action. For example, resource condition change is not considered. Improvement and/or degradation of the land resource should be reflected explicitly in the environmental indicators. The estimation of FBP is an intensive process and detailed financial details are sometimes difficult to obtain from participants.

Recording changes in FBP is of questionable value if not considered within a framework that considers other influences on FBP.

Comparability and consistency:

Measures of production, efficiency and gross margins can vary greatly between regions. However a measure of profits allows comparison between similar farms, industries and regions. FBP is one of the best measures to permit consistent comparison amongst disparate GRDC Farming Systems Groups. However, considerable effort will be required if GRDC wish to achieve consistent data across Farming Systems Groups. Using definitions as specified by ABARE will allow comparisons outside Farming Systems Groups and ensure consistency.
3.2 **Enterprise Gross Margins**

A gross margin provides an indication of the financial returns from an enterprise or suite of enterprises carried out on a farm.

<table>
<thead>
<tr>
<th>Enterprise Gross Margin =</th>
<th>Gross Income - Variable Costs (materials, services and hired labour that vary with the size of an enterprise)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Hectares (or other unit of limiting resource)</td>
</tr>
</tbody>
</table>

Gross income has two components – sales and change in inventory (important especially in livestock industries). Gross margins are useful for examining alternative farm activities and provide a guide to farm performance given similar environments. It should always be recognised that enterprise gross margins have limitations, as they do not consider impacts on capital.

**Data collection:**

A gross margin is calculated by taking variable costs away from the gross income earned from an enterprise. Gross margins are often reported on a per hectare basis for cropping enterprises and on a per head or dry sheep equivalent basis for livestock enterprises. Data collection is relatively simple.

**Strengths:**

Gross margins, including standard budgets, are easy to calculate and their use is widespread. They are the first step in farm budgeting. For assessment of farms within an area, they are easy to measure and useful if limitations are recognised. There are a number of standard gross margin budgets and tools available that can be used as a starting point for calculation.

**Weaknesses:**

Gross margins can be misleading if estimated gross margins from major changes in farm practice are compared with current practices in isolation. Gross margins do not include fixed or overhead costs such as depreciation, machinery purchases, or permanent labour costs and comparison can be misleading if the proposed practice affects these factors. For major changes in farm operation and significant investments, resource requirements (including land, labour and capital), risk and cash flow should all be considered in addition to the effect on underlying farm profitability.

**Comparability and consistency:**

Gross margins are comparable when examining similar enterprises. They are consistently understood and calculated.
### 3.3 Return on Capital

Return on capital (ROC) is a good measure of profitability for business. It is an important indicator as it allows comparisons of the profitability with other farms, which may be different in scale, and also comparison with other investment possibilities.

ROC is profit at full equity, divided by total farm capital. This value is then converted to a percentage rate.

\[
\text{Return on Capital} = \frac{\text{Profit at Full Equity}}{\text{Opening Value of Total Farm Capital}} \times 100
\]

**Data collection:**

As with FBP, return on capital estimation requires surveying in some form. ROC requires estimation of additional financial information and an estimation of the total farm capital. Many farmers obtain estimates of ROC through their accountant, but methods of calculation would need to be comparable if the figures are used in the calculation across farms. Whether the calculation of ROC includes capital appreciation or is based on the opening value of capital requires specification.

**Strengths:**

ROC and equity indicators provide a true measure of the position of a farm and allow comparison between farming systems and non-farming investment opportunities. The inclusion of capital allows analysis of significant changes to farming systems.

**Weaknesses:**

There are many variables that have to be considered when assessing ROC such as finance structures and property valuations. This complexity and privacy concerns could mean that estimation of ROC is costly and may not include all members of a Farming Systems Group. However, comprehensive examination of the impact on profitability or the assessment of significant practice change should include ROC as an indicator as it is a key measure of profitability.

**Comparability and consistency:**

ROC can be used for comparison. Like all financial indicators, when comparing farms and regions there are many factors that may cause variations in the indicators over and above the actions of the Farming Systems Groups. The definition used is consistent with ABARE practice, which should enable consistency and comparison between regions.
Suggested indicators to measure social health are:

- Participation in Farming Systems Projects and Groups;
- Increased Capacity; and
- Development and Use of Property Management Plans.

Social indicators provide a measure of change in the social and human capital of farming systems users and the community.

The primary social impact of research and development programs is a contribution to social capacity of the farming system. Social indicators must take into account the different points that producers, industries and communities start from in relation to R&D capacity. In order to provide information that is relevant at a business and a program level, three indicators are suggested. The indicators consider both the changes in social capacity and the influence of social factors in the farming system.

The impact on society is also an important consideration in reporting the social performance of farming systems. The contribution to regional economies is often used as an indicator of an impact of farming on society. This is most commonly calculated using input-output tables, requiring sophisticated interpretation. It is unlikely that any measurable level of additional economic activity can be attributed to a particular Farming Systems Project.

Information for the measurement of indicators can be collected by surveys or interviews, conducted on an annual basis by the GRDC. An additional step to strengthen the measure would be to document case studies (i.e. one per Farming System Group per annum) to provide relevant and accessible examples as well as verify the surveys.

### 4.1 Participation in Farming Systems Projects and Groups

This provides an indication of involvement and contribution to the Farming Systems Project/s and the associated social structures. It is also an indicator of capacity in terms of the social resources available such as expanded networks, sources of information flow and community relationships. The indicator is expressed with two numbers:

- the amount of time members of each farm business spend organising and participating in Farming Systems Project activities each year; and
- the number of Farming Systems Project activities each farm participates in each year.

\[
\text{Participation} = \frac{\text{Time spent on activities (hours/p.a.)}}{\text{Participation in activities (events/p.a.)}}
\]
Data collection:
Measuring participation will require surveying of growers and agencies involved in the Farming Systems Projects and Groups. Participants will need to record:

- Time spent participating and organising group/project activities directly (days or hours per annum); and
- Number of Farming Group/Project activities directly participated in (activities per annum).

Strengths:
The measure of participation provides a strong indication of the reach of the Farming Systems Projects and Groups and the effort growers and agencies contribute to these activities.

Weaknesses:
The indicator measures inputs rather than the results of the activities of Farming Systems Projects and Groups, relying on the assumption that participation increases social and human capacity.

Compatibility and comparability:
The indicator can be measured by all projects. Each group and region will have a different starting point and levels of on-going participation, allowing relative rather than absolute comparison.

4.2 Increased Capacity
Increased social capacity implies an increased ability and motivation to make informed decisions and act to improve individual, farming system, business or community situations. The indicator measures changes in awareness, attitudes, skills, knowledge, commitment (motivation), confidence and how they are applied.

The primary social impact of research and development is a contribution to social capacity of the farming system (increases to social and human capital). Impacts on social capacity can be categorised as impacts on:

- Individual attributes (confidence, self-esteem, happiness, quality of life);
- Working capacity (skills, knowledge);
- Relations with other participants and social networks (family, Farming Systems Group, local community, other); and
- Community attributes.

Data collection:
Measurement of the indicator involves surveying Farming Systems Group participants to identify changes in social capacity, how this was applied and the contribution of Farming Systems Group to the change. The measure could be augmented by case studies to demonstrate practice.
To allow comparison, a single survey of all participating groups and projects should adopt a questionnaire based on an accepted professional sociological methodology. The measure can be refined by focusing on a subset of indicators, such as the progress towards achieving capacity goals of each Farming Systems Group or the adoption of a specific practice.

**Strengths:**
Measuring changes and application of capacity focuses attention on the outcomes achieved rather than inputs, such as participation. A regular survey allows individuals, businesses and groups to track trends in what area capacity is changing and whether this is applied at a farming systems level.

**Weaknesses:**
Measuring all aspects of changes and application of capacity will require an in-depth survey if Farming Systems Groups wish to measure in detail. The measure is vulnerable to bias due to self-reporting.

**Comparability and consistency:**
Consistency and comparability is possible provided the same data categories are used in surveys across the whole program.

### 4.3 Development and Use of a Property Management Plan

A Property Management Plan (PMP) provides an indication of the farmer's awareness of the need for, and skill in, farm business management and the ability to integrate the various demands and issues in a farming system. The indicator is broken into three stages. Ideally all three stages should be reported.

**Stage 1: Development of PMP**

<table>
<thead>
<tr>
<th>PMP Development</th>
<th>Does the farm have a property management plan (Yes/No)</th>
</tr>
</thead>
</table>

**Stage 2: Scope of PMP**

<table>
<thead>
<tr>
<th>PMP Scope</th>
<th>Number of social, economic and environmental issues addressed in PMP.</th>
</tr>
</thead>
</table>

**Stage 3: Use of PMP**

\[
\text{PMP Use} = \frac{\text{Proportion of decisions made with reference to the PMP (p.a.)}}{3} + \frac{\text{Proportion of farming business members involved in decision}}{3} + \frac{\text{Has plan been revised this year (Yes=1 No=0)}}{3}
\]

3
**Data collection:**

Measuring the development and use of property management plans will require surveying of Farming Systems Group members. A desirable frequency is annually to reflect the yearly budget cycle and survey both the development and use of the plan.

**Strengths:**

A PMP is a mechanism to integrate the various demands and issues in managing a farming business. The presence and use of a PMP is a simple measure of social capacity for which data is easy to collect. The various elements of a PMP (succession planning, enterprise analysis, etc) could provide a basis for groups to benchmark across a range of issues.

**Weaknesses:**

The measure assumes that the presence and use of a PMP will improve the sustainability of a farming system. Detailed comparison would require the GRDC Farming Systems Validation and Integration Program to develop common standards for PMPs.

**Comparability and consistency:**

The indicator provides common units to compare differences over time and between farm businesses. Differences between individual businesses and Farming Systems Groups will make comparisons relative rather than absolute.
5 ENVIRONMENTAL INDICATORS

Suggested indicators to measure environmental health are:
- Groundcover;
- Integration of environmental Issues in on-farm decision-making; and
- Native vegetation.

Environmental benefits often stem from an increased understanding of environmental issues and improved capacity to manage natural resources. The actual benefits are expressed through biophysical change.

The environmental indicators discussed assess both management effort (inputs) and performance (outcomes).

5.1 Groundcover

Groundcover provides a surrogate measure for a number of environmental issues including soil erosion potential, water management and soil drainage. Surface cover protects the soil surface from raindrop impact, enhances infiltration, reduces soil erosion and may decrease runoff. Groundcover may include crop stubble and residue, pasture and woody vegetation (native and exotic), leaf litter, crusts, rocks and logs. In addition measuring perennial groundcover provides a finer indication of water management and environmental sustainability in cropping areas.

The groundcover indicator is broken into two stages. Ideally, both aspects should be reported on to provide a more complete picture.

**Stage 1: Groundcover**

\[
\text{Groundcover} = \frac{\text{Percentage of soil covered by vegetation or crop residue in set quadrats}}{\text{set quadrats}}
\]

**Stage 2: Perennial groundcover**

\[
\text{Groundcover} = \frac{\text{Percentage of property under perennial vegetation}}{\text{property}}
\]

**Data collection:**

Stage 1: The groundcover indicator is based on a visual assessment of set quadrats at the time of greatest erosion risk for each specific region or area. This assessment can be compared over time using the same quadrats and photo points and percentage groundcover compared to regionally specific standards recommending optimum groundcover levels.

Most research and extension agencies provide examples of what is considered adequate and inadequate groundcover and assistance in how to measure these on the ground and by remote sensing (depending on scale).
Records of rainfall and stocking rates should be kept to provide explanation for changes in groundcover over time. This information will assist with attributing the change to a Farming System Project or otherwise.

Stage 2: The perennial groundcover indicator can be simply measured as a proportion of a property under perennial vegetation species. Perennial species include all trees, shrubs and perennial pastures. The results can be compared over time to provide an indication of environmental sustainability of the farm.

**Strengths:**

Groundcover and perennial cover are simple to assess using on-ground or aerial photo interpretative techniques. These groundcover measures provide a thorough indication of physical soil health and degradation risks, as well as an indication of the environmental sustainability of cropping areas.

**Weaknesses:**

The proportion of groundcover and perennial species required to minimise the risk of soil erosion will vary by region and with topography, climate and soil type. Some Farming Systems Groups in certain areas may not promote perennial species as a priority management tool for sustainability therefore the results will be skewed by the information provided.

**Comparability and consistency:**

Sustainable levels of groundcover and perennial species are variable and dependent on local factors including soil type, climate and landform. Therefore these measures are difficult to benchmark and compare between regions. However, consistent on-farm assessment can measure change through time and can be used to assess the impact of different management regimes.

### 5.2 Integration of Environmental Issues into On-farm Decision-making

The integration of environmental issues into on-farm decision-making recognises that participants’ knowledge, awareness, skills and attitudes need to change before changes to management practices are likely to occur. Incorporating this measure into the TBL assessment would assist in identifying whether practice change is limited by a lack of awareness or whether there was some other limiting factor. An example of this is making an informed decision not to adopt a change because it will lead to some expected adverse outcome for the individual farm.

| Integrating environmental issues into on-farm decision making | Proportion of on-farm decisions per annum which took environmental factors into account |
**Data collection:**
This indicator requires a survey to assess participants’ awareness and consideration of priority environmental issues and implementation of management practices to address them. Simple measures such as the number of decisions made after a rigorous process considering all relevant environmental issues, and the extent to which they are incorporated into farm management should be assessed. An overall assessment could then be made of the proportion of decisions made after due consideration of environmental issues.

**Strengths:**
This indicator is highly relevant and easy to measure through an annual survey with simple affirmative or negative responses to a checklist of environmental considerations prior to making on-farm decisions that impact or may impact the biophysical environment.

**Weaknesses:**
It may be difficult to determine which decisions were made as a result of information provided by the Farming Systems Projects. Self-assessment poses the problem of subjectivity potentially biasing the results.

**Comparability and consistency:**
The limiting factor for comparability between regions will be different pressing environmental issues, which may be more or less straightforward to factor into on-farm decision-making. Results could be compared within regions with similar environmental circumstances, assuming methodologies and questionnaires were consistent and subjectivity minimised.

### 5.3 Native Vegetation

Native vegetation is considered to be native trees, shrubs, pastures and grasslands and can be used as a surrogate for on-farm biodiversity.

It is recognised that biodiversity may not factor in the objects of many of the Farming Systems programs and that changes will mostly be incremental and difficult to assess over a short time period, however it has been included as an optional indicator, which should be reported over three stages.

**Stage 1: Quantity**

<table>
<thead>
<tr>
<th>Native vegetation</th>
<th>Percentage of farm under native vegetation</th>
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</tbody>
</table>
Stage 2: Management

| Native vegetation management | Number of management practices undertaken (p.a.) |

Stage 3: Quality

| Native vegetation quality | Average species richness score for major vegetation types on farm |

**Data collection:**

More time and expertise is progressively required to perform the assessment in each stage set out below, yet the additional information contributes to a more complete picture of the impact on biodiversity values. Values should be recorded and compared on an annual basis to assess change.

Stage 1: Measure proportion of the property under native vegetation (%).

Stage 2: Assess the management practices (inputs) on the areas of native vegetation (Y/N) for the following factors:

a. Controlled access to stock;
b. Controlled access to stock in riparian buffers;
c. Control of weeds and feral animals;
d. Revegetation and regeneration;
e. Governance initiatives (voluntary conservation agreements, management plans); and
f. Threatened species present and habitat requirements met.

Stage 3: Assess the species richness (number of understorey and/or overstorey species) in a 20x20m area for each vegetation community to be assessed.

**Strengths:**

The native vegetation indicator is relatively easy to measure and requires minimal expertise (except for the vegetation quality aspect which can be viewed as optional, according to available resources).

**Weaknesses:**

As few of the Farming Systems Group projects encompass native vegetation management in their objectives, it may be difficult to assess the impacts of the projects. Also, incremental changes may be difficult to measure over a short time, particularly with indifferent seasonal conditions.

**Comparability and consistency:**

Basic data can be compared between regions on factors such as proportion of properties under native vegetation and management actions employed. However qualitative measurements are more difficult to compare.
6 REPORTING TBL INDICATORS

The TBL indicators have been chosen to operate at a farm scale in order to allow impacts to be assessed at a property level and comparisons made between farms and regions.

The indicators assist participants in the Farming Systems Projects to:
- Establish the bases for targets and goals when developing Farming Systems Projects;
- Manage and evaluate the impact and outcomes of projects and practices; and
- Report performance of the Farming Systems Project as a national program.

A sample of the nine indicators for an individual farm over three years is shown in Figure 1 to show indicators can be used to track progress and change over time.

**Figure 1  Example Farm TBL Annual Report**

**Farm Business Profit**

There has been a small increase in FBP this year to $46,000.

**Gross Margins**

Wheat and Barley GMs have increased slightly from 2005 and Canola has dropped by $20/ha.

**Return on capital**

ROC has increased to 5.5% in 2006.

**Participation**

Participation has doubled on a time basis but this has been spread between 3 rather than 4 events.

**Property Management Plan**

In 2006, the PMP was used in over 60% of decisions, addressed 9 compared to 7 issues in 2005.

**Groundcover**

Percentage groundcover/proportion of perennial groundcover remains the same as 2005.
Similarly Figure 2 shows how the results from each farm can be collated to compare within and between Farming Systems Groups.

**Figure 2** Example Annual Summary of Farm, Group and National Results

Farm 3 had a ROC of 4.2% for the year

The 7 farms within FSG ‘A’ averaged 4.67% ROC with a range of 2.3–7.4%

Nationally, ROC averaged 5.38% across the FSGs, ranging from 4.1–6.8%
## Summary of TBL Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Comment</th>
<th>Method/Data Source</th>
<th>Comparability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Business Profit</td>
<td>Provides a statement of the gross income minus the operating costs including finance costs and change in inventories.</td>
<td>Surveys, on-farm interviews, case studies.</td>
<td>Useful to compare similar farms, industries and regions.</td>
</tr>
<tr>
<td>Gross margins or activity analysis</td>
<td>Provides an indication of the financial returns from an enterprise or suite of enterprises.</td>
<td>Collated data, technical experts and cost surveys. On-farm surveys.</td>
<td>Comparable when examining similar enterprises.</td>
</tr>
<tr>
<td>Return on Capital</td>
<td>Important indicator for an individual business and a good measure of profitability.</td>
<td>Surveys, on-farm interviews, case studies, representative farms.</td>
<td>Can be used for comparison but may vary between farms and regions.</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in Farming Systems Projects and Groups</td>
<td>Provides an indication of involvement and contribution to the project and the associated social structures.</td>
<td>Surveys.</td>
<td>Relative rather than absolute comparisons effective.</td>
</tr>
<tr>
<td>Increased capacity</td>
<td>Provides a measure of changed motivation and informed decision-making ability.</td>
<td>Surveys.</td>
<td>Consistent and comparable provided the same data is collected.</td>
</tr>
<tr>
<td>Development and use of a PMP</td>
<td>Provides an indication of skill in farm business management and a measure of social capacity and ability to integrate and balance various demands and issues into a farming system.</td>
<td>Annual surveys.</td>
<td>Relative rather than absolute comparisons effective.</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundcover</td>
<td>Provides a measure of erosion potential and environmental sustainability.</td>
<td>Visual assessment, aerial photo interpretation and photo points.</td>
<td>Comparable if erosion potential variables can be factored in.</td>
</tr>
<tr>
<td>Integration of environmental issues into on-farm decision-making</td>
<td>Reflects knowledge, awareness, skills and attitudes to changed management and determines any limiting factors to change.</td>
<td>Survey to determine proportion of decisions made after considering environmental issues.</td>
<td>Comparable to a degree, although variation in environmental pressures will skew results in different regions.</td>
</tr>
<tr>
<td>Native vegetation</td>
<td>Provides a surrogate measure of biodiversity (includes native trees, shrubs and pastures/grasslands).</td>
<td>Survey to measure proportion of property under native vegetation and to determine management inputs.</td>
<td>Some factors (i.e. proportion vegetated) comparable within and between regions.</td>
</tr>
</tbody>
</table>


