# Evaluating natural resource management programs: an exercise in integration Introduction

## (Long Summary)

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## Introduction

NRM programs are **complex** when it comes to evaluating program performance. Historically it has been difficult for the Australian Government to report outcomes from large multi million dollar investments in national programs such as the NHT. Evaluations have relied on output data and reported largely on activities. The ANAO has been critical of constant output reports in NRM.

As a response the Australian Government through the DAFF and DEWHA is currently conducting a national trial in 13 regions across Australia, of an evaluation methodology for reporting by outcomes, Performance Story Reporting (PSR) based on the work of Dart and Mayne. Using program logic, a PSR provides a guide to check whether the program is on track to achieve longer term desired outcomes. In addition to providing an instrument for internal reflection and learning to inform adaptive management, PSRs are proving to be useful communication tools for the communities involved and policy audiences. They are being produced in both report and DVD format.

The pressing integration challenge for PSR is to judge program performance based on ecological and social outcomes and the relationships between those interacting components of NRM. This paper identifies two components of the PSR methodology and examines opportunities for strengthening the capacity of these PSR components by using the knowledge that has been generated through Integration and Implementation Sciences (IIS) based on work being developed by Gabriele Bammer and others at the National Centre for Epidemiology and Population Health at the Australian National University. IIS seeks to '…provide solid theoretical and methodological foundations to allow complex societal issues to be systematically addressed using evidence-based approaches.' The three pillars of IIS are:

- systems thinking
- participatory methods
- knowledge management, appreciating that there are many forms of knowledge and ways of knowing.

## Evaluation challenges in NRM

***Large number of variables***

- Multiple interacting factors affect the health of the environment;
- The state of the natural environment can be highly variable naturally and climatic impacts can dwarf management impacts;
- Agricultural markets are variable across national and international sectors;
- Australian farmers have an ageing demographic and many can't afford to adopt new sustainability measures/requirements.

***Non-standardised data collections***

- It is difficult to institute comprehensive national arrangements for collection and assessment of data and establishing baseline information for biophysical data;
- Institutional arrangements including those for evaluation roles and responsibilities, for collecting data, analysing and interpreting results, and reporting across jurisdictions remain unclear;
- Data collection is expensive, thus, national NRM evaluations rely on largely non-standardised output/activity data and do not usually report the extent, condition, or change over time in natural resources.

***Environmental change takes time***

- It took a long time to create the current environmental degradation and it will take a long time to repair it;
- There can be long time lags between management actions and a detectable difference in state of the environment;
- A long timeframe is required for improvement in the extent and condition of many biophysical assets and this does not always align with 3-5 yr funding cycles;
- Outcomes need to be achieved at a range of spatial and temporal scales to ensure appropriate information is available for management and learning;
- When program delivery models change, longitudinal evaluation is even more difficult.

***Different ideas of 'success'***

There are different views on what constitutes success. Here governance imperatives can conflict with what's possible in reality. Many policy decision-makers will only accept demonstrated improvement in biophysical assets at the national scale as a measure of the success of a program even though experience shows that the condition of many assets won't change in the timeframe of a typical funding cycle. Improvement in the condition of biophysical condition rests on appropriate institutions and knowledge and skills of resource managers at all levels. The creation of and support for institutions and management capacity must be counted as important outcomes from NRM investment. In the past this relationship has been unclear.

***MERI capacity***

- Need to support the many NRM program partner/program delivery agencies and their staff to adopt comprehensive evaluation approaches.
- Capacity building is needed for decision-makers/funding agencies to support the development of an adequate planning system that can be evaluated.
- Planning and design of programs and projects often lacks a logical framework that makes explicit assumptions about cause and effect; a framework that encompasses both social and biophysical aspects of NRM and their impact on each other. Lack of conceptual and intellectual rigour in program and project design and intervention theory can impinge on learning oriented evaluation being undertaken.

## Performance Story Reporting

The current PSR trial is illustrating a range of approaches and providing good fodder for assessing effectiveness of different approaches within PSR and great innovation to the methodology. The projects in the trial are now completed. A meta evaluation of the trial and the processes is scheduled for October 2008.

***What is PSR?***

PSR is a program performance evaluation methodology for a projects, programs, policies or strategies. PSR is a highly participatory approach.. It aims to facilitate internal learning and continuous program improvement. PSRs use program logic with short, medium and long term expected program outcomes specified. Qualitative and quantitative data is gathered in relation to each outcome at each level of the outcomes hierarchy as evidence of achievements. As well as explaining what a program has achieved and how it has contributed to a broad or long-term goal, a PSR describes the causal links that show how the achievements were accomplished. PSR offers a learning approach because it incorporates tools for reflection and documenting assumptions and decisions.

***The five parts of PSR***

A PSR report has five parts:

- Context and background to the program
- Results chart
- Findings, implications and recommendations
- Stories of most significant change
- Index

***Core processes/methods***

- Planning workshop involving key stakeholders and producing a program logic, assumptions, evaluation questions and identifying data sources;
- Data trawl – collection of primary and secondary data (biophysical, social, economic, cultural, types of data from reports, research etc);
- Interviews with a sample of representatives from key stakeholder groups;
- MSC - collection of significant change stories from people engaged in programs or activities, and the systematic selection of the most significant of these stories by selected panels (Dart & Davies 2003).
- Science panel – judgement of adequacy of data, identification of data gaps and other data sources;
- Summit – a workshop including all stakeholders to review the results chart and undertake the MSC process;
- Report – integration of all of above and evaluation findings and implications.

## Integration challenges in PSR

Two key parts of PSR that present particular integration challenges are the results chart and the final section of findings and implications.

Much hangs on the results chart being based on a rigorous data trawl, analysis and judgement. All relevant evidence must be accessed and attributed. accurately. The integration challenges that arise when constructing the results chart include:

- large amount of data;
- data from different disciplines;
- data from different perspectives/stakeholders;
- qualitative and quantitative data;
- potential for background/ preferences of evaluator/science panel members to influence and bias the results;
- Need for evaluator to have skills across disciplines and multi-disciplinary data analysis skills.

***Learnings from trial so far***

- The participatory methods and processes in PSR have been validated through a BRS study;
- Various steps in PSR provide for triangulation and help to validate data;

- integration & interpretation of data through the trial has taken different forms and approaches illustrating the lack of access to a structured integration framework or integration tools;
- the values/judgement that have informed data weighting may not always be addressed through the science panel and we need ways to express these judgements in PSR reports so they are transparent.

Integration challenges in the findings and implications part of the PSR report include:

- Combining stakeholder perspectives/assessments and evaluator expertise/judgement;
- Evaluating, interpreting and weighting data.

***Learnings from trial so far***

- Large amounts of different types of data - not always well integrated in findings
- Very little biophysical data
- Tendency to rely on summit workshop participants to identify reccs and implications
- Findings section needs to be more than a restatement of results chart-integrated analysis needed
- Need to build processes for facilitating learning –especially linking past, current and future learnings.

## Integration and Implementation Sciences

The work of IIS seeks to provide models and tools to assist in understanding and finding solutions to complex social problems and areas of high uncertainty. At this stage, the Integration Toolkit incorporates a systematic integration framework, integration models and integrator attributes, and a series of publications on integration including on dialogue methods, common metrics, products, vision and Institutional barriers and facilitators.

## Conclusions

- PSR is a highly integrated methodology
- The integration framework and integrators could be used in PSR to address the key methodological challenges

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| Integration Question | Systems thinking | Integrative methods | Knowledge management/ Ways of knowing |
|---|---|---|---|
| 1. What is being integrated? | ▪ social systems<br>▪ political systems<br>▪ knowledge systems<br>▪ natural systems<br>▪ geographic scales<br>▪ temporal scales<br>▪ cultures and community values<br>▪ judgements and interests | ▪ participatory methods<br>▪ appreciative inquiry<br>▪ program logic<br>▪ strategic assumptions- surfacing and testing<br>▪ science panel/expert judgement<br>▪ semi-structured interviews<br>▪ MSC<br>▪ summit-consensus conference<br>▪ analysis by integrator (possibly multi-disciplinary team) | ▪ scientific data/research/knowledge –qualitative and quantitative<br>▪ government statistics and reports<br>▪ local knowledge from diverse communities of interest – political, urban, rural etc<br>▪ prior evaluations<br>▪ prior learning and corporate knowledge - legacy |
| 2. What is the integration aiming to achieve? | ▪ integrated evaluation of progress towards environmental, social, economic, cultural outcomes<br>▪ shared understanding of relationships among environmental, social, economic, cultural outcomes<br>▪ shared understanding of how to use outcomes for future program improvement | ▪ program logic workshop<br>▪ strategic assumptions- surfacing and testing<br>▪ science panel/expert judgement<br>▪ Summit-consensus conference<br>▪ findings and implications section of PSR report integrating data from all parts of PSR process<br>▪ analysis of qualitative and quantitative data from multiple sources<br>▪ planning workshop following evaluation – social/organisational learning & adaptive management<br>▪ analysis by integrator (possibly multi-disciplinary team) | ▪ demonstrated progress toward outcomes – impact, appropriateness<br>▪ social learning for future program improvement (why is change occurring, what's working and what's not and clear recommendations for future management)<br>▪ reporting – accountability<br>▪ legacy –corporate knowledge in multiple sectors |
| 3. Who is intended to benefit from the integration? | ▪ program leaders and managers<br>▪ participating communities<br>▪ natural environment<br>▪ program funders | ▪ participation of all stakeholders through PSR methodology<br>▪ key stakeholders agree on evaluation questions<br>▪ integrated evaluation report reflecting cognisance of different stakeholders needs/purposes from the evaluation<br>▪ planning workshop following evaluation – social/organisational learning & adaptive management<br>▪ analysis by integrator (possibly multi-disciplinary team) | ▪ plain English evaluation report<br>▪ evaluation report that satisfies evaluation and accountability purposes of different groups of stakeholders<br>▪ PSR informs improved policies, funding strategies and management practices<br>▪ ?review organisational culture/structure/s |
| 4. Who is doing the integration? | ▪ NRM consultants with evaluation expertise<br>▪ program leaders and managers<br>▪ community stakeholders<br>▪ integrator (possibly multi-disciplinary team) | ▪ group facilitation & communication across stakeholders<br>▪ data identification, collection and sorting<br>▪ training community in PSR methods<br>▪ analysis by integrator (possibly multi-disciplinary team)<br>▪ analysis (and weighting) of qualitative and quantitative data from multiple sources and disciplines<br>▪ integrated report writing | ▪ NRM knowledge/experience<br>▪ evaluation expertise/experience<br>▪ sharing and equally valuing different perspectives and knowledge bases |
| 5. How is the integration being undertaken? | ▪ Multiple methods and data sources with multiple stakeholder groups | ▪ Participatory methods<br>▪ Program logic<br>▪ Evaluation questions | ▪ analysis by integrator (possibly multi-disciplinary team)<br>▪ NRM consultants with evaluation expertise<br>▪ expertise of science panel members |

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| Integration Question | Systems thinking | Integrative methods | Knowledge management/ Ways of knowing |
|---|---|---|---|
| | | ▪ Expert panel<br>▪ Summit workshop<br>▪ triangulation of data<br>▪ analysis by integrator (possibly multi-disciplinary team)<br>▪ planning workshop following evaluation | ▪ experience of program leaders and community stakeholders<br>▪ balancing disciplinary knowledge & values<br>▪ balancing knowledge & values of stakeholders<br>▪ linking outcomes from past experience and current evaluation to future program plans |
| 6. What is the context for the integration? | ▪ balanced environmental, social and economic outcomes from environmental policy and management approaches/practices | ▪ appreciative inquiry<br>▪ participatory methods<br>▪ analysis by integrator (possibly multi-disciplinary team) | ▪ Different requirements for the evaluation from different stakeholders<br>▪ Institutional arrangements for NRM programs<br>▪ ESD<br>▪ adaptive policy processes<br>▪ adaptive management of NRM program delivery agencies<br>▪ adaptive management of natural resources |
| 7. What is the outcome of the integration? | ▪ NRM program performance evaluation and reasons for positive/ negative environmental, social, cultural, economic, institutional program impacts | ▪ data assessed in multiple domains<br>▪ reflection on data, processes and experience in a learning environment<br>▪ NRM program outcomes reported and communicated to diverse audiences<br>▪ revised program logic and program strategies for next phase of program | ▪ clear statement of environmental, social, cultural, economic, institutional program outcomes at staged intervals and understanding of the relationships between them |

**Colour code:** **Green:** PSR component

**Orange:** There are opportunities to use insights from Integration & Implementation Sciences

**Purple:** There are ***major*** opportunities to use insights from Integration & Implementation Sciences