

EVALUATING LARGE SCALE PROGRAMS WITH MANY COMPONENTS

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ABSTRACT

Evaluation theory has been very successful at developing frameworks and methods for evaluating programs or projects within a unilateral policy approach or where there are clear cut project objectives. However, the complexity of service provision is increasing. Often funding programs or projects involves leverage, joint sponsorship, multi – providers and multiple outcomes. This complexity does not lend itself to current evaluation frameworks.

How do we move to the next step that involves evaluation coming to terms with complex programs or projects, managing partnerships and meeting differing stakeholder expectations? Are there any evaluation models which cater for this complexity? How does evaluation make sense of programs or projects with many components and capture total impact? For example, regional development programs which include business development, natural resource protection and rural adjustment, or large projects which are made up of technical research, extension and market development. Do we need to create new evaluation approaches and frameworks or do we already have the answers?

This symposium will consist of three brief presentations, each describing an approach to evaluating a large agricultural or natural resource management program. The evaluation approach will be described, as will the challenges and observations that have arisen. The bulk of the symposium will include a facilitated debate/discussion about issues arising from these evaluation approaches.

Although the examples presented in the symposium related to agriculture and natural resource management, it is intended that the resulting discussion and debate will have wider applicability to the evaluation of large, complex programs in other disciplines.

INTRODUCTION

The paper consists of short summaries provided by Claude Bennett, Bron McDonald and Michael Rowe. Each speaks of an evaluation approach to a large scale and complex program involving multiple stakeholders across many sites. Each suggests ways of managing the evaluation requirements of such programs. Apart from the fact that all three programs are related to natural resource management or agriculture, additional commonalities are apparent. In particular, program logic has been important in thinking through the evaluation approaches and frameworks; performance indicators are used in different ways and with different emphasis and all examples include multiple partnerships and stakeholders.

The challenges that arise from developing evaluation approaches to these programs are reflected in the symposium questions which Claude, Bron and Michael are keen to explore through the symposium. The questions generally center on exploring the methods used to evaluate large and complex programs with multiple stakeholders and projects.

DEVELOPING MANAGEMENT AND ACCOUNTABILITY INDICATORS FOR INTERGOVERNMENTAL PROGRAMS: THE CASE OF THE NATIONAL EXTENSION TARGETED WATER QUALITY PROGRAM
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In intergovernmental programming, projects are conducted by lower levels of government in conjunction with programs defined, guided, and funded by higher levels. Individual projects address specific problems and objectives relative to program goals. Indicators to manage and assess intergovernmental, multi-site programs must provide a broad set of options - in order to encompass, structure, and reflect variations among projects.

The Locus of Leadership for Intergovernmental Assessment

In joint planning, intergovernmental partners jointly develop indicators for the program management and assessment systems. This has potential to maximize all partners' commitment to and support for the indicators. However, major compromises may be necessary to satisfy each party's informational needs. Such compromises - as well as added scope, complexity, and time needed to develop a partnership consensus - may jeopardize relevance, practicability, and timeliness of assessment. In directed planning, a higher level of government establishes common program management and assessment indicators for project use. Although directed planning may more quickly establish program indicators, these indicators may not fulfill information needs of project partners. Such limitation may lead to data collection difficulties for the higher level partner, due to project partners' limited motivation to acquire and report the indicator data needed to assess the overall program.

Management and accountability indicators for the National Extension Targeted Water Quality Program were established by the federal partner, by consent from the administrative level of the state partners. The USDA-defined indicators guided reporting by state projects to USDA, in return for funding received by the projects from USDA.

Scope and Substantive Example

Two criteria for the development of indicators to manage and assess programs are as follows: (a) capability to encompass, structure and reflect specific variations among projects of a program, and (b) capability to encompass, structure, and reflect general features of a program, i.e., commonalities across projects. This paper examines an approach to developing program management and assessment indicators that can encompass, structure, and reflect the wide diversity that generally occurs across intergovernmental projects, while also reflecting program commonalities.

The paper describes the system for management and accountability of the National Extension Targeted Water Quality Program, 1992-1995. The Targeted Program was conducted in 53 of the 57 states and territories (hereafter "states") in the United States. In this program, state/local projects addressed national program goals selected by the U.S. Department of Agriculture (USDA). These goals were to: reduce pollution from animal wastes, plant nutrients, and crop pesticides; encourage collective action to protect water quality; and protect/improve the quality of drinking water from private wells. Due to the magnitude of the overall assessment, the focus of this paper is confined to the approach employed for the program goal to reduce/prevent water degradation from animal wastes.

Projects first indicated their intent to participate toward achieving the national goal of animal waste management. If staff of a project determined that a significant water quality problem in their respective state existed due to animal waste, then the project staff reported to USDA's set of indicators for the animal waste component of the Targeted Program. Projects next indicated the single animal species/waste that they identified as most closely associated with threats to water quality in their respective state. This feature allowed projects to (a) provide specific reporting so that substantive, meaningful data and variability of priority

across projects/states could be examined, as well as (b) report on only one example of their animal waste programming instead of providing a comprehensive report, thus minimizing resource expenditures. During 1992-1995, the top priority animal waste addressed by the program nationally was dairy cattle's manure (24 of the 47 states in the animal waste management component). Other animal species/wastes tracked in the national program included beef cattle, swine, and poultry.

Thirdly, project staff delineated and reported specific geographic areas as project reporting areas, in which the respective projects worked to combat threats to water quality by the animal species/wastes identified. The delineation of these areas, usually comprising several counties and marked on state maps, further specified the data reported to USDA and further reduced assessment costs. Next, projects indicated outputs of their animal waste management efforts. Indicators of animal waste project outputs included: (a) the three highest priority practices promoted for animal producers' adoption in the project reporting areas, the use of which would help to reduce water contamination from animal waste; and (b) methods employed to involve producers in considering adoption of these practices.

Each animal species/waste tracked by participating projects had the same key outcome indicator: i.e., percentage of animal units (AUs) receiving application of waste management practices adequate to hold animal waste runoff and/or infiltration to an acceptable level. The outcome indicator was employed in two ways in the management and accountability system: (1) to facilitate setting targets for outcomes; and (2) to facilitate tracking progress in animal waste management and aggregating progress observed across similar projects. Beginning at the 1992-93 baseline, outcomes attained by 1995 were reflected by changes in the percentage of AUs receiving adequate applications of recommended management practices. For example, on average across the 24 relevant projects, the percentage of dairy animal units treated by recommended practices rose from 19% at baseline to 28% by 1995. This observed outcome reached the 1995 target of 28% - i.e., the average target set by the 24 dairy cattle projects during the 1992-1993 baseline period.

Implications and Recommendation

The system for management and accountability of the Targeted Program allowed the characterization of commonalities and variations in situational problems; project objectives and quantitative outcome targets; and project outputs plus associated quantitative outcomes. This included characterization of commonalities and variations: (a) across all projects addressing the same general type of source of water pollution, e.g., animal wastes; and (b) across all projects with significant water quality problems due in greatest part to particular types of sources, e.g., dairy cattle's waste. At the same time, the assessment characterized project-by-project diversity of targets, outputs, and associated outcomes.

Rather than having engaged in a joint, participatory process to develop indicators for the National Extension Targeted Water Quality Program, the federal partner established the national indicators - following the model of "governments evaluate together with one of them leading the way." Rapidity of devising national indicators for the Targeted Program was achieved. Aside from the question of adequacy of these indicators for national use, two implications stem from the directed planning approach employed by USDA.

First, state water quality project staff had no previous familiarity with - or understanding of - the national indicators. Because of this, USDA faced severe data acquisition problems in building the national database for quantitative indicator data through the use of project reports. Although administrators of state Extension Services had agreed to a federally-established program management and accountability system, state water quality project staff had not previously concurred with the particular reporting system that was established. To overcome the low quality of indicator data supplied by state project partners, it was

necessary for the federal partner to conduct intensive quality-monitoring of project reports in order to upgrade the quality of indicator data.

The second implication, however, differs from the possible expectation that the USDA-devised indicators were of no use to the project partners for project management and accountability at their level. Even though most state/local water quality staff had no input to the indicators that were developed for national purposes, such indicator data were to a significant extent used for local project purposes including providing: guidance to develop materials to inform and educate project audiences; information to help respond to inquiries about the projects; and information to assist in the allocation of project funds.

Whether indicators for management and accountability systems are developed through a joint planning approach or through a directed planning approach will depend on many factors. Either way, it is essential to obtain as much intergovernmental consensus as possible on selection of indicators and their uses.

EVALUATING LARGE SCALE PROJECTS WITHIN PRIMARY INDUSTRIES

BRON MCDONALD, DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT, VICTORIA

Primary Industries is the Division of the Victorian Department of Natural Resources and Environment (NRE) which is responsible for service delivery to agricultural and fishing industries, and includes State purchasers and providers. The range of services covers research and development, extension, policy, regulation and trade development. Evaluation is implemented within the Division to satisfy accountability requirements, to promote organisational learning, and to provide credible information for the Division's communication strategies. This summary is a brief description of two major evaluation challenges for discussion in the symposium.

In recent times there have been three trends that have influenced evaluation profoundly within the Division. The first is that evaluation is gaining increasing importance as Governments seek to be assured that public resources are invested effectively to produce planned outcomes. At the same time there is rising concern with the current performance measurement - performance indicator systems and its capacity to deliver useful information. The recent writings from Perrin (1998) and Winston (1999) reflect this concern.

The second is the move to smaller government and the introduction of purchaser – provider models of delivery, competition and outsourcing. In simplistic terms, the purchaser role can be summarised as being responsible for investing resources wisely, and demonstrating the value of the investment. The provider role is to provide the service contracted and to assist with demonstrating the value of the service. Regular interchange between the purchaser and the provider is important to ensure effective service outputs as many public sector services cannot be specified clearly at the outset (McDonald & Kefford, 1998).

The third is internal to the Division. In 1996 it funded 1500 small project but now funds about 60 large projects. Part of the rationale was to provide a critical mass to justify investment in robust project development, evaluation, communications and risk management.

While many evaluation issues have emerged as a result of these trends, there are two major challenges. These are as follows:

- The complex nature of project architecture and the different evaluation requirements of stakeholders; and
- The limitations of the information provided by a performance indicator system.

Complex Project Architecture and Different Evaluation Requirements

The simple model of project architecture is that resources flow from a funder (State Government) to an investment manager (Primary Industries) to providers. This simplistic view becomes more complicated since frequently several purchasers and co-providers interact in a dynamic project environment. For example, Target 10, a dairy industry development project and typical of Primary Industries projects, has four funders, five investment managers and four providers. Even this is not the whole story. Operating in and around this system is a range of key stakeholders who may have a voice or representation in all the categories. These stakeholders include the farmer organisation (The United Dairy Farmers of Victoria), dairy companies, agri – business and other projects such as LandCare. These are but a few.

How can an evaluation strategy meet all the requirements of these stakeholders? This issue of complex project structures has been highlighted by Toulemonde et al (1998) who points out that 'the partners are politically independent, have legitimately differing objectives, and are not accountable in the same way to citizens... Partnerships tend to complicate evaluation work at each stage.'

Is it feasible to negotiate an agreement on evaluation requirements or is it useful to do so? How is it possible to devise a performance measurement system that adequately meets the needs of all stakeholders and partners? Toulemonde et. al. (1998) have suggested that a consensus approach may in fact be counterproductive. Stakeholders may compromise their evaluation requirements in order to preserve the partnership, but eventually grow dissatisfied as the project progresses.

The Limitations of Performance Indicators

A key to demonstrating a return on investment or the value of a service is establishing a practical methodology to measure performance. The system based on performance indicators was designed for the manufacturing sector and based on measuring the production and performance of identifiable objects (commonly known as “widgets”). The direct application of these techniques to services provided by Primary Industries has proven difficult and insufficient despite significant effort. The premise on which performance indicators and benchmarks are established assumes a closed system that does not acknowledge externalities. In the case of Primary Industries, two important externalities are market signals and the weather. For example, in Target 10, an unusually dry season can lead to increased participation in Target 10 as farmers seek to hone their skills to manage difficult times. But, this may be happening in a situation where the dairy companies have changed their pricing arrangements and the market is being deregulated. All these factors influence farmers' aspirations and attitudes to technology change, which in turn influences service delivery.

A Different Approach

The evaluation approach being taken by Primary Industries is as follows:

1. There is now a requirement for projects to develop, implement and review evaluation plans that include on detailed descriptions of what success looks like and the changes needed to achieve this success. These also contain a project / program logic [(Bennett's Hierarchy (Bennett & Rockwell, 1995), LogFrames (Sartorius, 1991) or the model developed in NSW (Funnell, 1997)], development of key evaluation research questions as well as the use of performance indicators, and economic modeling. Triangulation of methods is encouraged and the management of evaluation has to be explicit and monitored.
2. The second effort has been to focus people on outcomes (long term impact) and outputs (short term impact as opposed to process outputs)

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- 3 The third, is investment in evaluation research in methods and framework which better suit our environment, and in training.

EVALUATING LARGE PROGRAMS WITH MULTIPLE OBJECTIVES AND PROJECTS

MICHAEL ROWE, AGRICULTURE WESTERN AUSTRALIA

Background to the Gascoyne-Murchison Strategy

The Gascoyne-Murchison Strategy (GMS) is one of 12 Rural Partnership Programs around Australia. The Gascoyne-Murchison region consists of some 11 shires in the mid-western rangelands of North West Western Australia. The predominant industry is pastoralism and the region has faced a critical economic situation as a result of the downturn in wool prices since the 1980s (Gascoyne-Murchison Rangeland Strategy Steering Group, 1997). The Strategy was developed through community consultation in response to a series of Government reports highlighting issues associated with the long-term viability and sustainability of the Gascoyne-Murchison Region.

The Commonwealth Government launched the Rural Partnership Program in 1995. The Rural Partnership Program integrates the delivery of several funding programs at the regional level to address regional viability and sustainability issues. The GMS receives funding from the Natural Heritage Trust, the Rural Adjustment Scheme and significant funding from a number of State Government agencies to improving the sustainability and viability of the region. The goal of the GMS, established through community consultation is “a socially and economically viable community, involved in a diverse range of industries, based on the use of the rangelands in an environmentally sensitive way”.

The GMS is made up of 16 projects delivered through four core programs:

- Industry and Business Development Grants Program - integrating funding from a range of sources to provide significant grant funding to individual pastoralists and groups to undertake activities on their pastoral lease(s) to enhance their productivity and sustainability
- Voluntary Lease Adjustment Program - an innovative program which recognises the non-viability of existing leases that are too small to be viable, or could be ‘split up’ so as to enhance the conservation estate or provide lands for other uses
- Regional Environmental Management Program - consists of a range of projects targeting different aspects of market driven sustainability as well as attempting to enhance off-reserve biodiversity conservation and enhancing the existing conservation estate through the purchase of leases. Funding is also directed at capping and managing many of the collapsed artesian bores along the Western Edge of the Gascoyne-Murchison region
- Research and Development Program - a diverse range of projects which attempt to provide new technology to enhance rangelands production and improve climate predictability capabilities, as well as projects focusing on community awareness and research into alternative finance mechanisms for the industry.

In total, the Gascoyne-Murchison Strategy is worth some \$45million over 5 years.

Evaluating the GMS

The various funding agreements that enable the GMS require that it be evaluated and this is guided by the GMS Monitoring and Evaluation Strategy. This paper summarises the evaluation framework adopted in the GMS Monitoring and Evaluation Strategy, and the challenges that have arisen in delivering this Strategy.

The approach adopted to evaluate the GMS attempts to recognise its complexity and the multiple ‘levels’ and objectives of this large Program. These goals and objectives relate to different periods: a long-term Strategy goal; medium to long-term Program goals; and short to medium term project objectives. As with Bron McDonald’s evaluation approach (see this paper) the GMS is also faced with the dilemma of delivering evaluation for multiple stakeholders with different ‘evaluation questions’. The

evaluation therefore attempts to recognise the hierarchy of outcomes and objectives within the GMS by adopting different forms of evaluation at different 'levels' in the GMS and at different times throughout the life of the Strategy.

The GMS Monitoring and Evaluation Strategy is very much that described by Dart et al (1998:22):

An organisation, program or project, may conduct several different forms of evaluation to meet various needs. For example, these forms may include on-going monitoring systems to feedback information on progress, one-off evaluations to investigate a particular element of the program and a final impact assessment to determine the extent to which the goals of the program have been reached. These forms together make up an Evaluation and Monitoring Strategy...

Informing the development of the GMS Monitoring and Evaluation Strategy

In developing the GMS Monitoring and Evaluation Strategy, other evaluation frameworks and approaches were considered that had been adopted for similar, large-scale natural resource management or agricultural projects. These partly influenced and informed the development of the overall evaluation approach of the GMS Monitoring and Evaluation Strategy.

Bron McDonald's nine step framework to evaluate Target 10 Dairy Nutrition program is an integrated approach which includes evaluation for impact, process and design clarification (summarised in Dart et al, 1998). The GMS also shares the need to evaluate for these reasons.

Macadam (1997) has developed a monitoring and evaluation system for a regional development program focused on the dairy industry. This strategy is similar to that developed for the GMS in that it encompasses evaluation for impact, governance, management and the conduct of projects. His monitoring and evaluation system encompasses a range of issues and associated perspectives at the different levels of a program – high order goals to individual projects.

Coutts (1997) also provides some useful insight into the dilemma of evaluating at different outcome levels. His "three rings" of extension evaluation represent the internal project level, the direct project impact and the overall industry, community or societal level.

The evaluation approaches nominated above highlighted the following important issues and principles that informed the development of the GMS Monitoring and Evaluation Strategy:

- Different approaches to evaluate the whole of the GMS will be needed to those used to evaluate individual projects;
- It is much easier to understand and control the impact of the GMS at the project level than it is to understand the impact of the GMS at the industry or regional level;
- It is easier to evaluate GMS projects than it is to evaluate the GMS as a whole because much is beyond our control which will make a difference in the 'real world';
- It is important to recognise the impact of other players and influences when we seek to understand the impact of the GMS
- Evaluation should promote learning and understanding of processes and impacts
- Data collection and analysis should only occur when the findings can be and are used.

With these in mind, the following summarises the approach to evaluating the GMS at three different levels: Whole of Strategy; Core Program and Individual Project.

Whole of Strategy

The GMS Board, the GMS Management Team and the State and Commonwealth Government are probably the main stakeholders interested in the evaluation of the 'whole strategy'. At this level, Program Logic and stakeholder interviews were used to frame key evaluation questions and to identify key issues to explore through a baseline survey of pastoralists in the GMS region. A private consulting firm was contracted to conduct the baseline survey, which was undertaken to understand where the Gascoyne-Murchison community is currently 'at'. The survey will be repeated in several years time to ascertain the impact of the GMS on the region over time. Longitudinal case studies with selected GMS participants will enable an understanding of how the GMS has affected their lives.

Core Programs

It is possible that each major program will require its own evaluation plan that recognises the objectives at this level and the contribution of this program to the Strategy as a whole. However, this may be extra work for little gain and the GMS Board and others will need to determine whether it is appropriate to evaluate at this level given the limited resources available.

Individual Projects

The 16 projects that together make up the Core Programs will be evaluated, and this will involve more than just the program management/performance indicator monitoring, as required by the various funding agreements. This is because of the inherent limitations of evaluation merely through performance indicators (Winston, 1993;1998). As Winston (idid) suggests, confusion about what performance indicators are and their application; the potential for performance indicators to result in goal displacement; and the possible over simplification of complex programs all limit the potential usefulness of this approach for program evaluation. As the GMS is required to use performance indicators however, this occurs at the project level to facilitate project monitoring and reporting. LogFrames (also nominated earlier by Bron McDonald) are used in this context to identify and develop appropriate project level performance indicators (Farrington and Nelson, 1997).

The GMS Evaluation and Monitoring Strategy also attempts to enable a better understanding of the impact of the individual projects and their contribution to the overall goal of the GMS. Therefore, in addition to the collection of performance indicators required through the funding agreements, an evaluation plan is developed for each project. These project evaluation plans provide for an evaluation approach appropriate to the nature of the project. Therefore, evaluation plans utilise a range of methods to understand the project's impact, including surveys, cost benefit analysis, focus groups and case studies.

Summary of the evaluation framework for the GMS

Generally speaking the evaluation framework for the GMS involves the following aspects:

- consulting with stakeholders to understand the key evaluation questions that must be answered for the Strategy as a whole (generally these have revolved around 'impact' issues, e.g., what difference has the GMS made to participants in their land management/business planning capabilities etc.)
- undertaking a baseline survey to understand where residents of the GMS region are 'at' at the beginning of the strategy's life, with regard to attitudinal issues towards risk, desire for change, the future of the region etc. The baseline survey will be repeated at some point in the future in an attempt to understand how the GMS has impacted on people's attitudes and beliefs
- a series of case studies of participants in the GMS, tracking their involvement in the Strategy over time in order to understand how the multiple aspects of the Program are influencing the individual 'on the ground'
- at the project level, constructing an individual project evaluation plan which recognises that each project is quite different in its methodology and objectives and the evaluation approach needs to reflect this

- also at the project level, using LogFrames to locate performance indicators required of the various funding agreements to be located with the appropriate projects and responsible project manager to ensure the information is collected and compiled
- conducting project evaluations as determined by the project evaluation plans.

Challenges

There are a number of limitations and challenges which arise from attempting to evaluate a large and complex program like the GMS which involves multiple projects and stakeholders, all with different objectives and evaluation needs.

Firstly, all projects should be contributing in some way to the regional goal. However, how do we make sense of individual project evaluations within the context of a large initiative like the GMS? In addition, where many projects are attempting to assist the Program participants, how do we understand the interactions that occur within and between the projects in an evaluation sense and how do we report these?

QUESTIONS FOR THE SYMPOSIUM

From the above, Claude, Bron and Michael have identified the following questions as issues important for discussion at this symposium.

Claude Bennett

1. Which approach to indicator development is preferable - the joint planning approach or the directed planning approach?
What evidence have we for selecting a preference?
2. To what extent can providing successive options within indicators, in order to accommodate variability among projects, compensate for initial lack of intergovernmental staff consensus on indicator relevance and feasibility?

Bron McDonald

3. What models have people been using for managing the differing evaluation expectations of multiple stakeholders and how successful have they been?
4. What approaches have people taken to overcome the issue of performance indicators providing insufficient information?

Michael Rowe

5. What evaluation approaches have been used successfully in evaluating large programs with many complex projects, each with different objectives and anticipated impacts?
6. Where multiple projects are attempting to impact on program participants, what evaluation approaches can reveal the collective impact that these projects are having on participants?

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