Development of a Monitoring, Evaluation and Reporting Framework for the Invasive Pest Plant and Animal Program in Victoria

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Introduction

This paper describes the development of an integrated monitoring, reporting and evaluation framework (MERF) designed to measure the impacts of all invasive plant and animal (IPA) programs and projects delivered by three Victorian government agencies. Implementation of the framework is designed to describe the way in which aggregation of multiple individual project outcomes leads to the achievement of higher order statewide IPA program strategic outcomes.

The MERF enables the measurement of the impact, effectiveness and efficiency of programs and projects delivered under IPA investment across land tenures in Victoria. The MERF also satisfies the reporting requirements of various internal and external stakeholders.

Context and Drivers for Change

Requirement for improved measurement of outcomes
There is increasing pressure on agencies delivering Natural Resource Management (NRM) programs to develop improved methods of measuring the impacts, appropriateness, effectiveness, efficiency and legacy of the policies and programs they deliver.

The Australian National Audit Office (ANAO) has criticised federal Natural Heritage Trust environment funded programs for inadequate targets and reporting. It stated that "*overall the ANAO considers the information reported in the Department of Agriculture, Forestry and Fisheries and Natural Heritage Trust annual reports has been insufficient to make an informed judgment as to the progress of the programs. There is little evidence as yet that the programs are adequately achieving the anticipated national outcomes.*" [1]

A NRM Monitoring and Evaluation Reporting and Program Improvement Framework (MERI) is being implemented by some NRM agencies to address this deficiency. It is however recognised that measuring the impacts of NRM programs is difficult for many reasons but in particular, due to the long term nature of such environmental change at the required landscape scale.

Lack of alignment of evaluation and reporting across different agencies delivering IPA programs.
In recent years, Victorian government agencies delivering invasive plant and animal programs have made significant improvements in evaluating the appropriateness, effectiveness and efficiency of their projects and programs, but as for many NRM agencies, have not had agreed parameters for measuring short, intermediate and long term impacts, nor adequate systems for collecting and reporting on these impact measures. Generally, program and project outcomes are described in terms of outputs or activities delivered (eg area of pest infestation actively managed, meetings attended, extension material delivered etc) within the life of the project, and longer term outcomes are either not measured or surrogate indicators are used without strong evidence of causal links between these and the outcomes in question.

In addition, three government agencies in Victoria deliver invasive plant and animal programs across private and public land: Department of Primary Industries (DPI), Department of Sustainability and Environment (DSE) and Parks Victoria (PV). Each of these agencies has

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[1] Australian National Audit Office report on the NRM regional delivery model, 2007-2008.

different evaluation and reporting mechanisms in place to measure the outputs and effectiveness of delivery of their IPA programs. Until recently these have been developed without the benefit of an overarching strategic framework that describes and aligns program and project outcomes with each other and with policy outcomes.

As the number of IPA projects has increased over the last few years, so has the need for an integrated monitoring, reporting and evaluation framework (MERF) which can measure the effectiveness of all IPA programs and projects across government.

Change in governance and investment processes for IPA.
Transfer of the IPA policy and investment function from DSE to DPI and implementation of a new investment framework in DPI further drove the requirement for increased accountability and demonstration of achievement of outcomes and return on IPA investment across government.

Purpose of the MERF

The purpose of the MERF was defined against the context and drivers for change described in the previous section.

1. To demonstrate the value and efficiency of IPA investment – How we are currently investing.
- Accountability to government and community
- Justify continued and additional investment.

2. To inform policy and strategic direction of the Victorian IPA program – How to invest in the future.
- Identify gaps or areas of improvement in the current IPA program strategic direction
- Assess the progress and success of the IPA program strategic direction
- Provide evidence to support the IPA program strategic direction
- Influence future IPA program directions
- Guide future allocation of resources.

3. To demonstrate the impact of the Victorian IPA program – the difference we are making.
- Demonstrate the difference the IPA program is making through biophysical, economic and social measures.
- Identify the required capacity and capability for IPA program delivery.

4. To understand the effectiveness of Victorian IPA programs.
- Identify gaps or areas for improvement in current IPA program delivery
- Demonstrate effectiveness of policy tools and other delivery mechanisms.

5. *To gain knowledge required to underpin further development of the Victorian IPA program.*
- Understand how the distribution of IPA management effort correlates with the distribution of threats across Victoria
- Establish where there is a need for IPA management.

6. To provide knowledge that can underpin stakeholder communication and engagement.
- Provide the evidence required to show that government is adequately addressing IPA problems
- Manage stakeholder expectations.

MERF Development timeline

A working party consisting of representatives from the three agencies with expertise in IPA policy, program delivery and evaluation was established to develop the MERF. A summary of the steps involved in the development is shown in Table 1.

Figure 1: MERF development timeline.
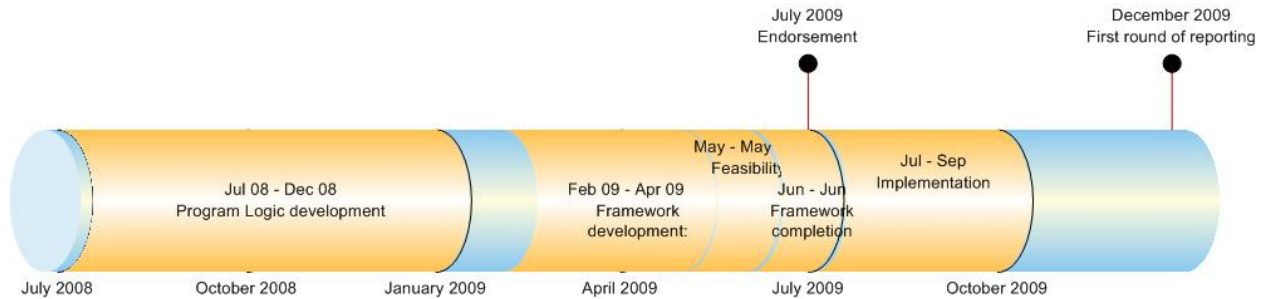
Program Logic

The fundamental tool which underpinned the development of the MERF and its implementation across the agencies was a Program Logic. Considerable investment in time and effort was made in order to develop a series of Program Logics firstly at the policy level and then cascading down through program and then project logics.

The Program Logics were based on the following framework, modified from the University of Wisconsin. [2]

Figure 2: Program Logic
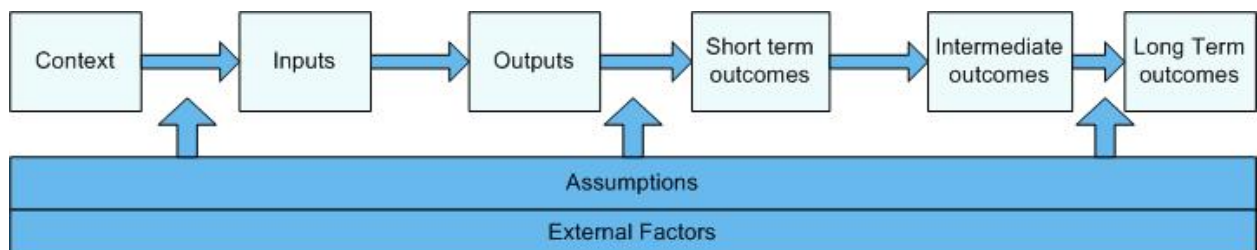
Outcome Mapping and MERF Structure

Once detailed Program Logics were developed at each of the three levels policy, program, project), outcome mapping was then used to simplify the process to enable alignment of outcomes at each of the levels. A simplified schematic of the outcome map is shown in Figure 3 below. We used DoView software (www.doview.com) to prepare detailed outcomes maps which provided the ability to display multiple outcomes for each project and drill down from one level to another in the outcome hierarchy.

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[2] University of Wisconsin- Extension, Program Development and Evaluation

Figure 3: Outcome mapping
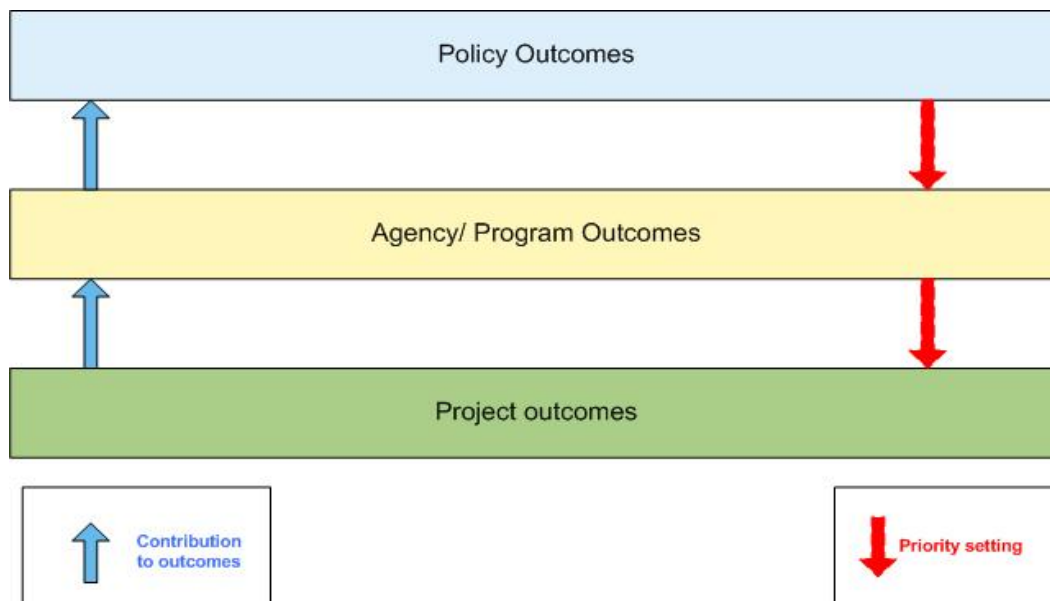
Outcomes were specified at a whole-of-government policy, agency and project level. The blue arrows in the diagram describe that outcomes are specified first at the policy level and then flow down to the agency/ program and project level. Once projects are implemented (using Program Logics to plan activities to achieve the stated outcomes), the red arrows show that the contribution towards achievement of the Policy outcomes flows in the opposite direction, from project delivery upwards

Key Evaluation Questions, evidence and data become the basis of the MERF

Once the outcomes were specified, Key Evaluation Questions (KEQs), evidence and data sources were defined and this formed the basis of the MERF structure as illustrated in Figure 4.

The Key Evaluation Questions addressed the following areas*:*
- Impact of the program on achievement of IPA outcomes (5 KEQs)
- Value and efficiency (1 KEQ)
- Effectiveness (5 KEQs)
- Strategic alignment (2 KEQs)
- Continuous improvement (1 KEQ)

Figure 4: Schematic of MERF structure
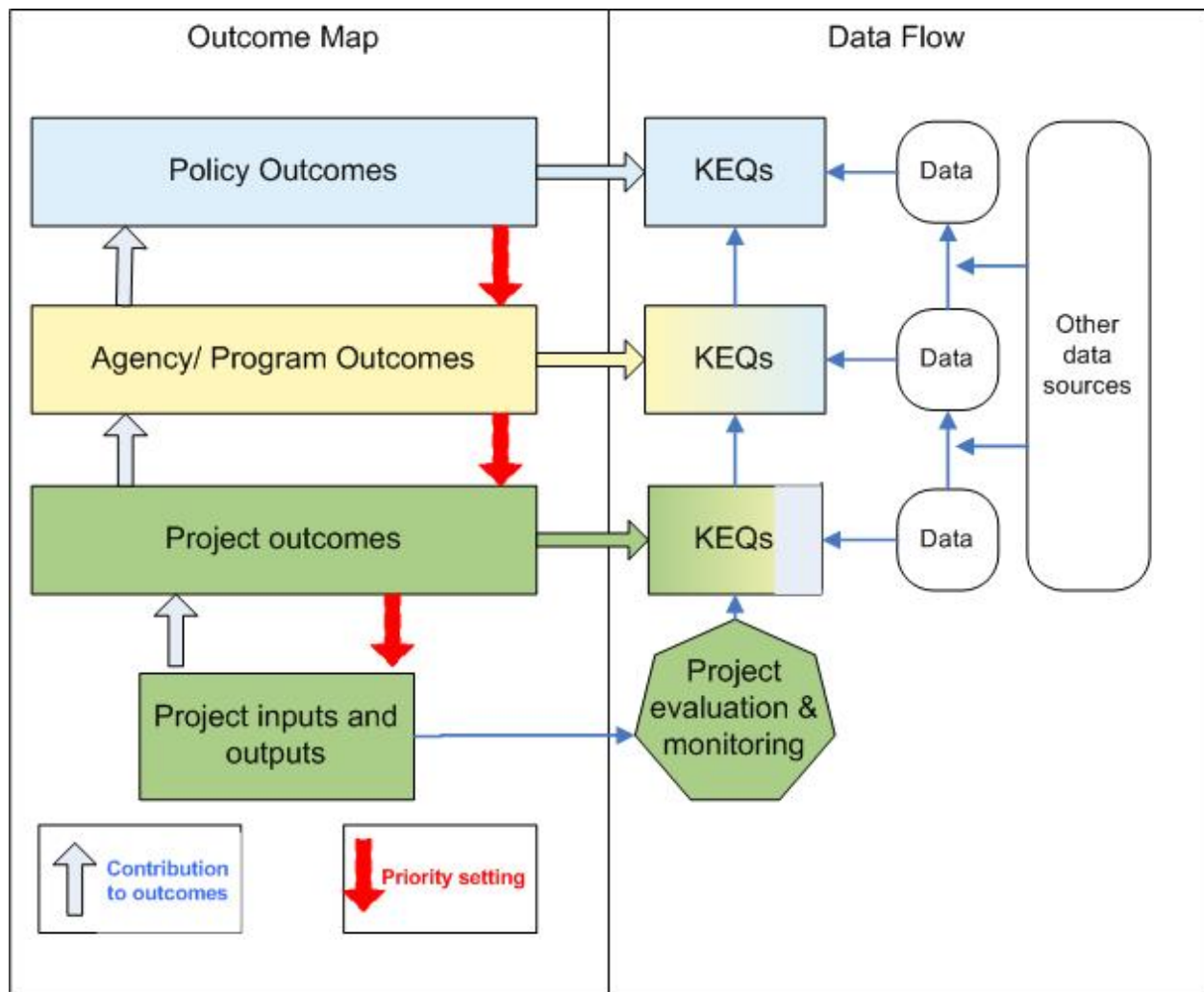
Source: Phil Pegler, Parks Victoria

The figure describes that each level has unique KEQs but may also share KEQs with the level above. Similarly it is likely that each level of KEQs will require data specific to that level, but some data should contribute to answering KEQs in the levels above. Relevant data includes a mixture of quantitative, qualitative, economic and performance indicators.

In the ideal world, outcome mapping and design of evaluation frameworks occurs in a logical, top-down order as described in Figures 1 and 2. In reality, the process for development of the MERF in our case, was significantly more complicated than described above as we were not designing the MERF in a program logic and evaluation vacuum. Many of the projects (approximately 40) already had established their project logics and evaluation frameworks and had been collecting data against these for some time. While these were aligned with their agency's outcomes, the IPA policy outcomes had not been developed at the time. So, once the higher order policy outcomes and associated Key Evaluation Questions were developed each agency had to go through a process of aligning their agency outcomes with the new policy ones and reviewing their KEQs to ensure that the data they were collecting would contribute to these higher order policy outcomes. In many instances there were gaps, particularly in measuring impacts, and new data collection processes and systems had to be designed and implemented.

Feasibility Analysis and Systems Plans

Once the draft framework was developed, each agency conducted a feasibility analysis to determine precisely what data they needed to collect to answer the KEQs, whether they had systems in place currently to do so, and if not, what was required in order to fully implement the framework for their programs. In order to do this, the agencies needed to create very specific data definitions to enable the analysis of the suitability of current systems. One agency developed Systems Plans for each of their 25 projects. The Systems Plan is essentially the next level of detail under the Evaluation Plan. It required the Project Leaders to answer a series of questions as follows:
- What are the key Monitoring, Evaluation and Reporting needs of your project?
- What do you need to know? What are the data definitions (eg specify numerator and denominator)
- What should the information output look like and how often is it needed?
- What baseline data do you need?
- What existing systems do you need?
- What new or modified systems do you need?

The benefits of employing this disciplined approach at the beginning of the project are clear, A Systems Plan:
- Makes Project Leaders focus on sources, availability and utility of data sources needed for their evaluation and monitoring activities.
- Tests assumptions that data will be available and usable.
- Avoids commonly seen pitfalls of getting to the end of a project and finding that the required data is not available or not available in the necessary format.
- Allows systems sharing across different projects and avoids unnecessary duplication.

Governance processes

Processes around the operating rules of the MERF implementation need to be developed. These rules include:

- Roles and responsibilities including who is responsible for contributing data for each KEQ. Not every project contributes data to every KEQ and some KEQs can only be addressed at the policy and investment level.

- Reporting formats and frequencies

- Target setting. Targets have purposely not been set at the commencement of implementation as collection of baseline data is required to inform these decisions.

Implementation by Agencies

The Implementation phase consists of the following steps:
1. Align each project's logic with the policy logic.
2. Review each evaluation plan against the MERF and add or modify KEQs as required.
3. Modify the way in which operational staff collect, store and manage data. This involves revising data entry standards, training and in some cases changes to work practices. For example, the MERF has driven changes in the way in which Field Officers measure and record pest infestations.
4. Upgrade systems to deal with increased data needs.

5. Develop data warehousing to ensure all evaluation and monitoring data inputs and outputs, together with reports are accessible to all relevant parties in a central location.
6. Implement new reporting systems.

A phased implementation approach is planned, over several years, in recognition of the technical complexity of the framework and the need to conduct some further research and development work on monitoring protocols and standards. In addition, a rolling evaluation schedule will be developed for some of the KEQs designed to measure the effectiveness of various policy tools, delivery strategies and enabling activities (such as communications, information technology, research, capacity building etc).

Unexpected consequences

The process of developing the MERF involved a number of project delivery staff from the agencies, in addition to those on the Working Party. This involvement engendered a high level of ownership and buy in by these staff despite the fact that full implementation of the MERF required a considerable additional workload for them. They welcomed the fact that they were no longer required to report on meaningless output indicators and instead had a logical, integrated framework against which they could demonstrate their projects' achievements

The MERF was also a catalyst for a cultural change in these people's interest in data quality. Data quality improvement strategies are notoriously difficult and often require a "stick" approach. In our case, the opportunity to report on meaningful indicators, as provided by the MERF, was the "carrot" for the staff to instigate and drive their own data quality improvement programs, with no requirement for any type of "stick" approach. This has led to them instigating a review and re-write of data entry protocols and a significant data cleaning exercise on the core technical database.

Conclusion.

Clearly, designing a MERF in a green field site for new program development would be significantly easier, however it is likely that our situation which required "retrofitting" would be relatively common and so our project has shown that it is still possible to develop a robust evaluation and monitoring system which is readily implementable and is recognised as important and beneficial by all participants.