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Monitoring and Evaluation: Tokenism or the Potential for Achievements in Streamway Management.

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Summary: This poster considers the benefits and application of monitoring and evaluation systems in streamway management through the proposal of a simple framework that can easily be developed during project conception and design, rather than during implementation. The framework proposed identifies the logical hierarchy of inputs, outputs and outcomes and how indicators can be established for each stage. The application of Goal Attainment Scaling is proposed as a means of structuring the data for each of the indicators so that progress towards objectives can be evaluated.

THE MAIN POINTS OF THIS PAPER

- Monitoring and evaluation can be simple tools applied to determine change as a result of streamway management.
- Such a framework should be established at conception and design phase of a project, rather than during implementation.

1. INTRODUCTION

The last decade in Australia has seen a strong move in the government service industry towards product based performance and accountability for the management of inputs (resources) to achieve outputs. This is a responsible approach in the management of public monies that maybe sourced either through funding bodies, environmental levies or government budget allocations. Also as more responsibility is passed onto the community for on-going management of natural resources there has been a need for these community groups to demonstrate a plan for the use of funds and report on how funds have been used.

The introduction of a monitoring and evaluation system within such plans would assist not only with reporting requirements but planning and implementation of future projects.

2. PURPOSE OF MONITORING AND EVALUATION

Monitoring is a concept that has been around for many years but evaluation did not start to emerge until the 1950's. If evaluation was undertaken it was often limited to physical inputs and outputs rather than the nature and impact of the proposed benefits (UN ACC Task Force, 1986).

When used in combination monitoring and evaluation can be an effective tool in natural resource management by:

- enabling effective and efficient design and implementation of projects;
- ensuring valued judgements during a review of the project;
- the demonstration of accountability for resources provided; and
- provision of information to review resource management options.

Management of our natural resources is very much an evolving process particularly in waterway management. Issues associated with water allocation and environmental flows that have emerged in the last decade now require the practical application of developing policies that must consider environmental, social and financial factors. Monitoring and evaluation therefore becomes a tool that assists in this evolving area of resource management.

Monitoring and evaluation should not dominate the work that is trying to be achieved but should be a practical component of the work to be performed. This recognises that monitoring and evaluation is integral to all stages of a management cycle as depicted in Figure 1 (AACM, 1998).

3. CONCEPTS OF MONITORING AND EVALUATION

The understanding of some key terms and concepts used in the context of monitoring and evaluation are important to the development of a framework for implementation.

Monitoring: Refers to a continuous or periodic review of the activities within the identified project (or program). It implies the collation of information in a structured manner that will assist in evaluation and therefore consists of:

- planning and design;
- data collation; and
- information management.

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Evaluation monitoring, as opposed to monitoring for activities such as a scientific experiment, will rely on data from defined performance indicators. Therefore monitoring for evaluation purposes will often be a subset of a larger monitoring program. It will include input and management information as well as information associated with the status of natural resources.

Evaluation: is a process for objectively determining the appropriateness, efficiency and effectiveness of activities in the context of the desired objectives (DEF, 1994). For example determining the impact of riparian management on a length of waterway in light of the output objective of reducing nutrient accession through erosion control. Evaluations can be carried out to determine the appropriateness of the project (during implementation), at completion or ex-post. Completion and ex-post evaluations consider the impact of the project, where ex post may be carried out some time after the completion of the project.

Project Outputs vs Outcomes: For a defined project the inputs allocated will go through processes to result in actual project outputs. The project outputs are more a direct result of the inputs and processes and hence will be apparent in the shorter term. Often project outputs are tangible. For example the implementation of a riparian management plan or the length of a specific waterway that has undergone erosion control applications. Outcomes will occur a longer period of time and are a result of outputs being achieved but may also be impacted positively or negatively by external factors. It is the achievement of expected outcomes that will result ultimately in the goal that is trying to be perceived (DEF, 1994).

The logical hierarchy that results from the definition of expected inputs, outputs and outcomes can be illustrated in Table 1.

5. APPLICATION OF MONITORING AND EVALUATION TO IMPROVE WATERWAYS MANAGEMENT

Monitoring and evaluation systems can be just offered as a token in order to achieve funding approval. Or the terminology may become rhetorical without the development and implementation of the system.. Simple systems can be developed that will provide information on change as a result of activities.

Indicators are tools for monitoring and evaluating the effects and impacts of an activity and hence will help measure change (UN ACC, 1985). Therefore indicators provide information of progress towards meeting project objectives. Table 1 can therefore be developed further (Table 2) to demonstrate potential indicators for the inputs, outputs and outcomes.
If indicators are established to measure change or progress towards objectives then a simple system for organising the information to measure the change is required. One such system that evolved from the social sciences but has been applied in resource management is Goal Attainment Scaling (GAS). Primary Industries and Resources SA have applied this technique in the evaluation of rehabilitation of seismic lines and abondoned well sites (Malavazos & Sharp, 1997). AACM have also applied GAS in the evaluation of environmental benefits of the Green Corp Project (AACM, 1998).

Data is presented in a simple matrix that compares an assessment of the level of expectation of outcome against the indicator. Indicators can be weighted to reflect the relative importance of different issues that are under investigation.

The scores allocated could be 1 (least expected result), 3 (expected result), 5 (above expectation). Over time, the trend can be analysed to determine if there is a shift towards the right (ie a positive trend in expectation) or towards the left (a negative trend). Table 3 demonstrates a simple layout for a GAS matrix.

One of the most powerful benefits of using an approach of describing your objectives then identifying performance indicators and measurements of success is for it to be undertaken before the commencement of a project. Undertaking such a process will help reinforce what the project is trying to achieve as well as how it can measure and justify its achievements. The other advantage is that risks can not be managed unless they are identified and this process should help identify risks.

6. CONCLUSIONS

The establishment of a monitoring and evaluation system at the commencement of a project provides feedback at the conceptual and design phase as well as enabling the identification of data requirements before implementation.

Monitoring and evaluation systems should be seen as an opportunity to provide information back into Best Management Practice that may be applied to streamway management rather than just fulfilling reporting requirements.

7. REFERENCES

AACM (1998) *Evaluation of the Green Corp Program*. Report to DEETYA.

Department of Finance (1994) *Doing Evaluations - A practical Guide*. Canberra.

Malavazos, M. and Sharp, C.A. (1997) *Goal Attainment Scaling: Environmental Impact Evaluation in the Upstream Petroleum Industry*. Proceedings Australasian Evaluation Society 1997 International Conference, Adelaide.

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TABLE 1: DEMONSTRATION OF A SIMPLE LOGICAL HIERARCHY

	Objectives
Goal	Aquatic ecosystem enhanced for the identified beneficial use waterway biodiversity
Outcomes	Decrease in nutrient accession to waterways Increase in community understanding of riparian management issues Improved management process of the stream riparian zone
Outputs	To complete priority erosion control works identified in action plan Undertake restricted stock access trial within riparian zone Raise community awareness of riparian zone management Implementation of Riparian Management Action Plan
Inputs	Resources for riparian management plan approved Catchment management plan developed with the incorporation of a Riparian Action Plan

TABLE 2: INDICATORS FOR PROJECT OBJECTIVES

	Objectives	Indicators
Goal	Aquatic ecosystem enhanced for the identified beneficial use waterway biodiversity	Macroinvertebrate index Diversity & extent of riparian vegetation
Outcomes	Decrease in nutrient accession to waterways Increase in community understanding of riparian management issues Improved management process of the stream riparian zone	Phosphorus & nitrogen load input:output Riparian management processes understood by community BMP for the riparian zone documented and reviewed every 3 years.
Outputs	To complete priority erosion control works identified in action plan Undertake restricted stock access trial within riparian zone Raise community awareness of riparian zone management Implementation of Riparian Management Action Plan	Erosion control works completed within approved budget. Restricted stock access trial completed. Community awareness program implemented Official launch of Riparian Management Action Plan
Inputs	Obtain resources for riparian management plan. Catchment management plan developed with the incorporation of a Riparian Action Plan	Approval confirmed by contract Documentation referenced as part of the funding bid

TABLE 3: SIMPLE GAS CRITERIA FOR COMMUNITY AWARENESS

Performance Indicator: Riparian management processes understood by community

	Criteria	Allocated Score
Most Unfavourable Outcome	No community consultation or awareness programs	0
Less Than Expected Success	Initial consultation held either with groups or by media. No follow up on initial consultation.	1
Expected Level of Success	Initial consultation plus additional community briefings through the project. Additional briefings include fact sheets, field days and media. Community enquires about the project.	3
More than Expected Success	As above but community participation in aspects of the on-ground work.	5
Most Favourable Outcome	As above but with community groups involved in ongoing maintenance and monitoring after completion of the work.	7
	Score	

FIGURE 1: MANAGEMENT CYCLE AND EVALUATION STAGES