Australian Government

NRM **MERI** FRAMEWORK

AUSTRALIAN GOVERNMENT NATURAL RESOURCE MANAGEMENT
MONITORING, EVALUATION, REPORTING AND IMPROVEMENT FRAMEWORK

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Contents

Abbreviations and Acronyms

ANZLIC	Spatial Information Council of Australia and New Zealand
IFAD	International Federation of Agricultural Development
IUCN	International Union for Conservation of Nature
MERI	Monitoring, Evaluation, Reporting and Improvement
M&E	Monitoring and Evaluation
NLWRA	National Land & Water Resources Audit
NRM	Natural Resource Management
OECD	Organisation for Economic Co-operation and Development

Section 1
Introducing the MERI Framework

1.1 Purpose and scope

This Natural Resource Management Monitoring, Evaluation, Reporting and Improvement Framework (MERI Framework) is a broad, overarching document. It provides a generic framework for monitoring, evaluating, reporting on and improving Australia's approach to managing key assets. The key asset classes in the natural resource management (NRM) context include human, social, natural, physical and financial assets. At the program level, evaluation strategies will be developed to provide details for implementing the MERI Framework.

Monitoring, evaluation, reporting and improvement are integral components of NRM programs. These activities provide approaches to assess the impact, appropriateness, effectiveness, efficiency and legacy of policies and programs and a process to promote accountability.

The purpose of the MERI Framework is twofold. It:

» explains the overarching conceptual framework for evaluating[1] NRM programs with an emphasis on learning, improvement and accountability

» is intended to guide the development and implementation of program-level and investment-level evaluation plans.

A separate document, *Natural Resource Management Assets and Indicators*, supports this document to guide implementation of the framework. Appropriate indicators and methods of measurement are continually being developed. Consequently, the *Natural Resource Management Assets and Indicators* will be a version-controlled living document rather than a static framework.

Evaluation is an essential component of natural resource planning and management. It must be considered at every stage of investment and program planning and implementation. The purpose of the MERI Framework is to reinforce, review and refine natural resource management and investment strategies and practices to ensure that adaptive management occurs as part of continuous improvement.

MERI provides a model for assessing program performance and the state of and change over time in assets against planned immediate, intermediate and longer-term outcomes. It provides opportunities to improve program and project design and delivery and to reorient investment at key decision points throughout the life of the investment strategy or policy.

A series of companion documents will provide guidance on specific approaches to and tools for NRM monitoring and evaluation that are compatible with the broad approach of this MERI Framework. Additional process documents and guides to assist implementation of the framework will be developed as required. Guides and resources are listed in Appendix 2.

1 The term *evaluation* in this context encompasses periodic assessment of the appropriateness, impact, effectiveness, efficiency and legacy of a policy, program or project 'through a set of applied research techniques to generate systematic information that can help improve performance' (IUCN 2001). It includes formal external, independent evaluations and 'self-evaluation processes [that] can help to build an internal culture of reflection and evaluation, as well as stronger ownership of the results' (IUCN 2001).

1.2 Managing for natural resource outcomes

Partnerships are a keystone of NRM programs in Australia. NRM programs and initiatives are often funded jointly by the Australian Government and state and territory governments. Private funds are increasingly an important part of the mix. Many NRM programs and initiatives are being delivered regionally. Regionally delivered NRM programs enable a high level of community participation, which can lead to enhanced awareness and knowledge and better management practices.

Operating across multiple jurisdictions and scales, the NRM partnership model is necessarily complex. This complexity, however, enables all parties to contribute in an integrated way to improving NRM assets. Broad agreement among the partners allows for a coordinated effort to improve the condition of our most valued and most endangered environments and natural resources.

The challenge

The task of assessing and tracking the progress of investments in NRM activities is an enduring challenge. This is because:

- NRM outcomes need to be achieved at a range of spatial scales
- multiple interacting factors affect the health of NRM assets
- the condition of NRM assets can be highly variable naturally
- there can be long time lags between management actions and a detectable difference in the condition of NRM assets
- the social context in which NRM operates can often mean there are different views on what constitutes success
- climatic impacts can dwarf resource management impacts
- developing cost-effective indicators presents a challenge.

These elements of uncertainty and risk require NRM program design, including monitoring and evaluation plans, to include rigorous risk assessments.

Guidelines, including working examples, have been developed for implementing the MERI Framework. The guidelines will assist the development of a common understanding of the framework so that it can be practically implemented with a reasonable degree of flexibility to accommodate differences in jurisdictional capacity.

The MERI Framework places the emphasis on assets—both the intrinsic and utilitarian values that people place on the environment and the many resources and opportunities it provides for human consumption and wellbeing. An asset-based approach is most amenable to targeting and measuring outcomes in terms of conservation, repair and replenishment of natural resources. It also enables construction of a logic or theory of change to guide action for improving the state of an asset. This in turn enables the development of measurements to monitor and assess change in the asset over time; the relative effectiveness, efficiency and appropriateness of different interventions; and the extent of change or impact from action.

The MERI Framework is designed to make change transparent so that all parties can learn, through reflection and discussion, which interventions are most appropriate, effective and efficient. Its four components—monitoring, evaluation, reporting and improvement—support a ‘learning by doing’ approach to evaluation. The components are discussed in detail in Section 2 of this document.

Four key MERI concepts

The MERI Framework incorporates four important concepts:

» an **integrated approach** to investment and program design, the planning process, evaluation and adaptive program management involving partners across jurisdictions

» an **asset-based approach** to evaluation that promotes target setting for the key asset classes that contribute to sustainable NRM

» monitoring **program performance** in addition to the state of and change over time in the condition of assets

» reporting with an emphasis on **outcomes and impacts**, including at an intermediate outcome stage

1.3 Policy context

The Australian National Audit Office (2008) found that significant components of the NRM investment model were performing well, given the long timeframe required for large-scale improvement in the condition of many of Australia's NRM assets. Experience also suggests that investment in NRM programs and projects will be enhanced through development of a logical program design relating to all levels of investment.

This MERI Framework provides a **program logic**. In this overarching conceptual framework, the term relates to NRM outcomes generally rather than to a specific program. Program logic is the rationale behind a program—what are understood to be the cause-and-effect relationships between program activities, outputs, intermediate outcomes and longer-term desired outcomes. Program logic shows a series of expected consequences, not just a sequence of events.

The NRM program logic is represented in Figure 1. It reflects the reality that many of the desired changes in NRM asset condition may occur over much longer timeframes (possibly 20 to 50 years) than the investment cycles. Actions can be guided through regular reflection on the accuracy of the assumptions underpinning the program logic.

A program logic should be developed and used for each Australian Government–funded NRM program or priority outcome area. This will assist in logical and realistic program design, including target setting, and all aspects of monitoring, evaluation, reporting and improvement, to achieve national NRM outcomes in priority areas.

The NRM program logic set out in Figure 1 was developed based on assumptions about the series of consequences that are likely to lead to positive outcomes in the condition of NRM assets. This logic underpins the MERI Framework and acknowledges that NRM operates at a range of scales and over different timeframes:

» **Foundational activities**—activities to inform investment, including planning, benchmarking, assessment and prioritisation.

» **immediate activities and outcomes**—easily identifiable activities and related immediate goods, services and infrastructure.

» **intermediate outcomes**—a combination of biophysical and non-biophysical results that lead to change by way of maintenance of and/or improvement in NRM asset condition.

» **longer-term outcomes**—tangible and measurable changes resulting from maintenance of and/or improvement in NRM assets, including NRM organisations and institutions.

1.4 Program logic

NRM outcomes should be considered in the context set out above and as illustrated in Figure 1. It is important to note that the outcomes are often iterative and occur at multiple or varying timeframes for different classes of assets. Investment priorities will be determined through negotiations and agreements between program partners.

The logic acknowledges that to achieve and adequately report on desired outcomes there must be a focus on both the means and the ends. There are two important investment streams:

» investment in **biophysical outcomes**—ends

» investment in **social, institutional and economic outcomes**—means to achieve biophysical outcomes.

It will always be necessary to invest in management of resources and natural environments to ensure that threats and pressures are reduced and that these assets are protected and enhanced. Continuous investment in both social/institutional and biophysical assets through all levels of the outcomes hierarchy is required to enable and sustain the desired outcomes.

The high-level NRM outcomes and specified classes of assets in this MERI Framework provide program administrators and managers with the overarching structure from which to derive a clear MERI plan for programs and priorities.

1.5 Principles

Five key principles underpin this MERI Framework:

» NRM interventions encompass a **range of temporal scales** (up to 50 years or more), and **institutional and spatial scales**. Assessment of performance of NRM interventions should acknowledge this range of scales and use logic-based approaches to measuring and reporting.

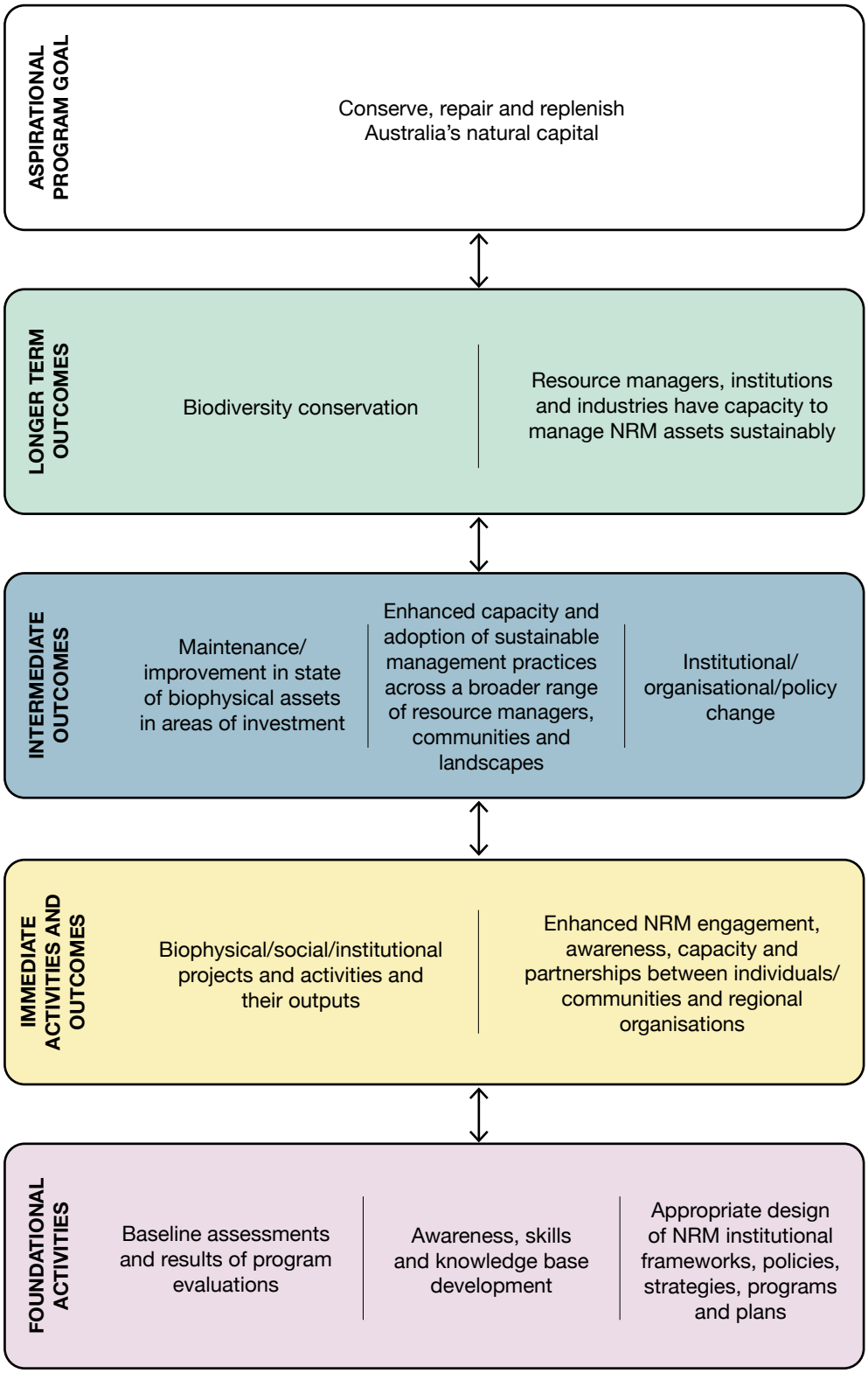
» Evaluation of NRM programs should incorporate **assessment of multiple lines of quantitative and qualitative evidence** about both the state and trend of identified NRM assets and key aspects of program performance which describe the causal links between *what* a program has achieved and *how* the achievements were accomplished.

» Establishing and fostering a **constructive partnership** among all partners in NRM—Australian, state, territory and local governments, regions, communities, industries and other relevant stakeholders—is essential both for generating evaluation recommendations and for ensuring their uptake and ownership.

» Effective NRM rests on **meaningful and efficient partnership arrangements** and evaluations that are recognised by stakeholders as being well informed, relevant and timely, and are clearly and concisely presented.

» Establishing **effective evaluation methods and feedback loops** from evaluation to policy makers, operational staff and the community is essential if evaluation lessons are to be learned, recommendations adopted and the required changes and program improvements made.

Figure 1 Natural resource management program logic



1.6 Objectives

This MERI Framework aims to:

- **make the links** between the planning process, monitoring and evaluation activities, and adaptive management in NRM explicit
- provide a structure to inform the development of **clear evaluation questions** in relation to the impact, appropriateness, effectiveness, efficiency and legacy of NRM policies, programs and initiatives
- inform the development of **logical investment strategies** across scales and across timeframes, including setting achievable targets
- **improve capacity** to report on NRM program performance
- provide tools for progressively developing a **national picture of progress** towards longer-term NRM goals
- improve analysis of the successes and shortcomings of strategies, to **improve the performance of programs, initiatives and projects** and to enable development of better instruments and policies for sustainable resource management.

1.7 Partners and stakeholders

NRM stakeholders are all those who influence the management of Australia's NRM assets, including:

- ministers of the Australian Government and state and territory governments and the associated government departments and operational divisions
- regional NRM organisations throughout Australia
- direct natural resource and land managers, both public and private
- Indigenous communities and traditional owners
- local government and relevant statutory bodies
- industries and industry organisations
- non-government organisations
- researchers and research organisations
- co-investors that supplement NRM program resources in particular projects
- the natural environment, which in and of itself has both intrinsic and instrumental value
- Australia's current and future rural and urban populations, who depend on the nation's natural resources for health, wellbeing and livelihoods.

1.8 Building MERI skills and resources

This framework and the associated user guides support NRM stakeholders to build a good working knowledge of key NRM evaluation concepts and approaches. Equally important will be the building of institutional capacity to enable integrated implementation of the framework. NRM organisations will be supported to adopt MERI principles and tools.

1.9 Roles and responsibilities

All partners in NRM have a role and responsibility in collecting, storing, analysing, evaluating, improving and reporting on program performance and asset condition and trend data. All partners also have a responsibility to evaluate and report on progress.

The specific MERI requirements for each funded NRM project will be contained in individual delivery contracts or agreements. Roles and responsibilities of NRM partners will be set out in program evaluation plans and MERI implementation plans for specific initiatives and programs.

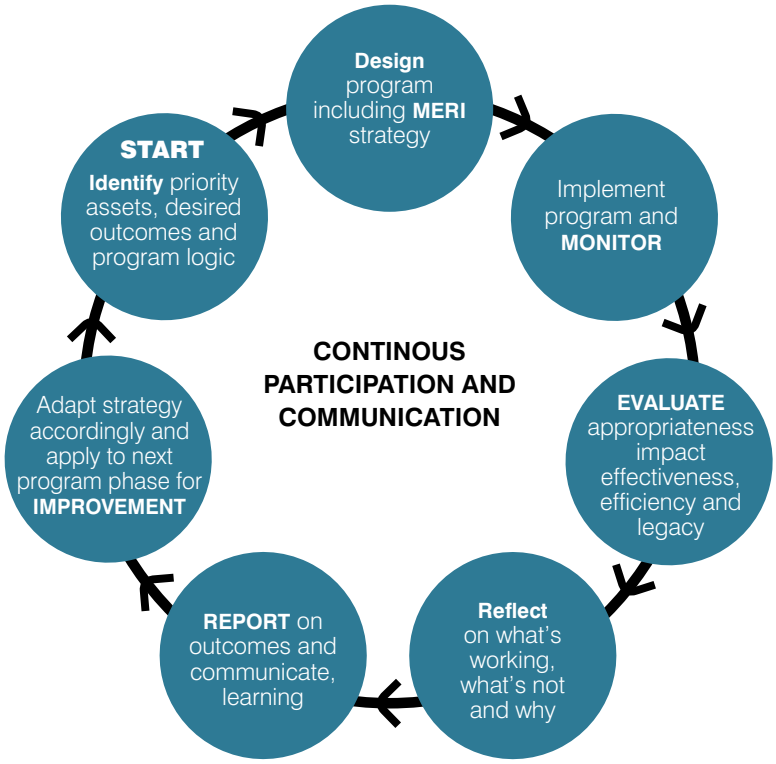
Section 2
MERI in Context

2.1 Program improvement and adaptive management

This section provides an overview of the key elements of the MERI Framework.

MERI is viewed as a continuous cycle of participation and communication rather than as a single evaluation event. MERI promotes learning and adaptative management in response to progressive monitoring and evaluation. which enables improvement in program design and achievement of desired outcomes. Figure 2 illustrates this MERI cycle of continuous participation and communication.

Figure 2 Program improvement and adaptive management



2.2 NRM MERI approach

The NRM MERI approach is based on a theory of change that models the steps involved in moving from the current situation to the desired outcomes of investment and activities. It is underpinned by continuous tracking, which provides information to help steer a policy, program or priority area in the desired direction.

» When developing a MERI plan it is useful to identify boundaries, such as:
  - **what** will be evaluated?
  - **who** the evaluation is for?
  - the **purpose** of the evaluation and who will and will not be involved
  - the **available and required resources** (including access to research and scientific data) and information required to enable strategic reflection on progress and to generate adaptive practices.

Table 1 illustrates the key steps in developing a MERI plan. Monitoring, evaluation, reporting and improvement are iterative activities undertaken throughout the planning, design and implementation of policies and programs.

Table 1 Key steps in developing a MERI plan

Key steps	Outputs
Program logic	» Desired changes, and the types and extent of changes expected at different scales » Key assumptions about how change will occur » Anticipated outputs and outcomes » Key evaluation questions and methods » Specified targets for outcomes » Performance indicators, both qualitative and quantitative
Monitoring	» Relevant data » Reflection on results of monitoring » Strategies for program improvement
Evaluation and reporting	» Impact appropriateness, effectiveness, efficiency and legacy assessed at different stages of the program to determine immediate, intermediate and longer-term outcomes » Output reports » Financial reports » Outcome reports » Communications and reports on evaluation results as required to internal stakeholders and key external stakeholders
Improvement and adaptive management	» Reflection on what is working and what is not working based on monitoring data and evaluation reports » Changes to program direction or arrangements based on reflection on monitoring results and outcome reports

The series of MERI guides listed in Appendix 2 will assist users to implement MERI.

2.2.1 Program logic

The program logic, as defined in Section 1.4, lays the foundation for learning about which strategies have the most impact and adapting in response to that information. It provides a theory of change that can be tested. It also helps to determine when and what to evaluate so that resources can be used effectively and efficiently. A logic model assists in developing appropriate process and outcome measures.

The NRM program logic as illustrated in Figure 1 comprises a hierarchy of expected NRM outcomes at different temporal scales. The logic provides the basis for informing decision making at various scales, including for national and state policy making and regional program management. The generic NRM outcome hierarchy illustrated in Table 2 provides an illustration of the types of outcomes that could be expected at each level of the hierarchy.

It is important to understand the **distinction between an outcome and a target**. An **outcome** refers to the results achieved at the defined levels of the outcomes hierarchy in the program logic. A **target** is a specified objective that indicates the number, timing and location of that which is to be realised for a policy, program or activity (IFAD nd).

Table 2 Generic NRM outcome hierarchy

	Outcome hierarchy	Outcome description	Associated target
Aspirational program goal	Vision for the asset	Statement of the overall vision for the state of the asset in 50 years. This statement helps guide program planning and provides a context for setting other targets	No targets at this level
Longer term outcome	Improvements in the state of the asset	Expected outcomes relating to the condition of the biophysical, institutional and social assets as a result of intervention	Usually longer-term targets at a broad geographic level
Intermediate outcome	Aggregate changes in how the asset is managed and affected	Changes in management practices resulting in impact on asset condition across a region A reduction in pressures on and threats to the asset	Intermediate targets (e.g. percentage of land protected or managed in a certain way over five years)
	Practice and attitude change	Adoption of best practice or sustainable management practices Enhanced knowledge, aspirations, skills, attitudes and/or confidence Institutional and organisational change, as reflected in corporate policy, business practices, laws and infrastructure	Immediate and intermediate targets (e.g. percentage of land/resource managers or communities that adopt sustainable management practices)
Immediate Activities and outcomes	Biophysical outputs	Deliverables that are related to immediate on-ground results as set out in investment plans and funding agreements	Output targets (e.g. number of hectares of land re-vegetated or enhanced)
	Non-biophysical outputs	Deliverables that are related to immediate social, institutional, cultural or economic results as set out in investment plans and funding agreements	Output targets (e.g. number of community plans, number of participants in training workshops, or number of incentives projects funded)
Foundational activities	Project activities	Activities that largely concern the development of NRM strategies and investment plans. These include: » conducting baseline assessments and analysing program evaluation results » building skills and developing knowledge base » developing institutional frameworks, plans and strategies » undertaking community consultation » consulting and/or commissioning scientific research	Output targets (e.g. number of community workshops conducted or number of educational resources developed)

Together with knowledge of available resources, science and data, this type of hierarchy assists in defining and reality testing the change that is expected at each level and the extent of change that is anticipated. The next step would be to develop implementation strategies to effect the desired change.

In many instances, significant changes in some NRM assets will not be seen for many years. Intermediate outcomes—both biophysical improvement and improvement of the social and institutional capacity to manage natural resources sustainably—also need to be identified to assess progress towards longer-term outcomes.

2.2.2 Monitoring

Monitoring involves collection and analysis of information to assist timely decision making, ensure accountability and provide the basis for evaluation and learning. It is a continuing function; methodical collection of data provides management and the main stakeholders of an ongoing project or program with early indications of progress and achievement of objectives (IFAD nd). Monitoring data informs continual, broad-scale assessment in order to address the key evaluation questions (outlined in Section 2.2.3).

Monitoring in the context of this MERI Framework aims to ensure that appropriate data is available to assess:

» the state of and change over time in the condition of assets across the range of spatial scales, including areas of investment

» the capacity of NRM systems, including the policies, organisations, strategies, programs, projects, people and technologies that create the conditions for improving the state and trend of the biophysical resources.

The impact of NRM investment and activity will be assessed in an integrated way, through qualitative and quantitative measures of cause and effect and the extent of change using two streams of monitoring data:

» **monitoring asset condition**—changes in the state of and trends in the condition of assets as measured at the area of investment and at higher levels through agreed indicators

» **monitoring program performance**—changes in people, organisations, institutions, practices and technologies that create an environment that is conducive to improving asset condition.

The framework allows for monitoring across the range of jurisdictional levels. Multi-jurisdictional monitoring will show the extent of change at the local and regional levels in the short term and indicate the extent of progress in understanding and demonstrating improvement in asset condition at the state/territory and national levels.

Two core groups of data—asset state and trend data and program performance data—are required for continuous monitoring of policy and program outcomes. This data will be integrated and analysed to demonstrate intermediate and longer-term policy and program outcomes. Data from reports on program outputs and governance and accountability will inform periodic program evaluations. This approach must recognise both that NRM programs operate at federal, state/territory and regional levels, in partnership, and that targets are set for different time scales—foundational, immediate, intermediate and longer-term.

Asset monitoring

Asset monitoring refers to a process of continually assessing the state of and change over time in NRM assets—human, social, natural, physical and financial. Continuous assessment of the state of and change over time in assets in NRM programs and priority areas will:

» provide details on joint investment for the collection, interpretation and reporting of asset state and trend data

» provide information about how data will be exchanged and used, through NRM asset condition data storage and management systems

» identify assets and indicators consistent with the requirements and policies of NRM partners

» identify jurisdictional custodianship and a single point of contact for fundamental NRM data.

Program performance monitoring

Monitoring program performance in accord with this MERI Framework will involve assessing outcomes from program investments over the designated timeframes. Monitoring in this context will:

» include assessment of immediate, intermediate and longer-term outcomes as a means of measuring progress towards desired goals for asset condition

» make continual assessment, learning and adaptive management integral parts of all programs

» support regular reporting to stakeholders and investors.

Where possible and relevant, monitoring reports should include spatial data that is consistent with the investment design and program logic.

2.2.3 Evaluation

Evaluation in the NRM context encompasses periodic assessment of the appropriateness, a policy, program or project 'through a set of applied research techniques to generate systematic information that can help improve performance' (IUCN 2001). It includes formal external, independent evaluations and 'self-evaluation processes which can help to build an internal culture of reflection and evaluation, as well as stronger ownership of the results' (IUCN 2001).

To improve program design and delivery, reorient investment during the life of the program, and fulfil accountability requirements, evaluations that report on outcomes should be planned to inform key decision points throughout the life of the program and at the end to collate learning and inform future programs. This MERI Framework provides for evaluation to test the causal link between the outcome levels.

Monitoring and evaluation plans will be developed at a range of levels, consistent with program delivery models, to address questions under five key categories. They are high-level questions for which more specific program-level questions relating to particular outcomes should be developed. The key categories and associated questions are:

Appropriateness

» To what extent is the program aligned with the needs of the intended beneficiaries?

» To what extent is the program compliant with recognised best practice processes in the field—e.g. the type, level and context of investment and associated activities?

Impact

» In what ways and to what extent has the program or initiative contributed to changing asset condition and management practices and institutions?

» What, if any, unanticipated positive or negative changes or other outcomes have resulted ?

» To what extent were the changes directly or indirectly produced by the program interventions?

Effectiveness

» To what extent have the planned activities and outputs been achieved?

» Are current activities the best way to maximise impact or are there other strategies that might be more effective?

» To what extent is the program attaining, or expected to attain, its objectives efficiently and in a way that is sustainable?

Efficiency

» To what extent has the program attained the highest value out of available resources?

» How could resources be used more productively and efficiently?

» What could be done differently to improve implementation, and thereby maximise impact, at an acceptable and sustainable cost?

Legacy

» Will the program's impacts continue over time and after the program ceases?

» How should the legacy be managed and by whom?

To inform future approaches to management and investment, for each of the above questions **it will be important to ask why the change has or has not occurred**.

Through MERI a range of evaluation methods can be adopted. Some methods and data sources are outlined in Table 3. The list is not intended to be exhaustive or prescriptive. Decisions regarding the methods and data to be used to address the questions will be developed in MERI implementation plans for specific initiatives and programs.

A range of evidence from both program performance and asset condition data should be collected to demonstrate achievements. This should be done for all assets using consistent assessment methods. Quantitative and qualitative measurements can be used to answer the evaluation questions, and varying techniques and sources of evidence may be employed at each scale or timeframe of the program and at each outcome level in the program logic.

Indicators for asset condition will assist in setting targets in program plans and provide standard approaches to measurement. Asset classes and indicators for NRM are provided in a separate document, *Natural Resource Management Assets and Indicators*, which will be continually improved and extended in line with available science. Protocols are available for measuring against the indicators developed through the National Land & Water Resources Audit.[2]

2 Protocols for measuring against agreed national indicators of asset condition can be accessed at http://nlwra.gov.au/Footer/Advanced_Search/?searchCriteria=protocol&bol_saveResults=true&filterSites=9&x=41&y=9.

Table 3 Key MERI evaluation questions and possible methods and data sources

Evaluation question	Suggested method or data sources	Report
Appropriateness To what extent is the program aligned with the needs of the intended beneficiaries To what extent is the program compliant with recognised best practice processes in the field—e.g. the type, level and context of investment and associated activities?	Needs analysis techniques Expert review Participatory planning Social, environmental and/or integrated impact assessment Internal reflection on processes and outcomes Periodic independent evaluation	Needs assessment Output reports Financial statements Outcome reports incorporating program performance data and asset state and change over time data
Impact In what ways and to what extent has the program or initiative contributed to changing asset condition and management practices and institutions? What, if any, unanticipated positive or negative changes or other outcomes have resulted? To what extent were the changes directly or indirectly produced by the program interventions?	Monitoring condition of assets Internal reflection on processes and outcomes Periodic independent evaluation	Program performance outcome reports, including asset state and change over time at area of investment, and incorporating output data Periodic independent program evaluation report
Effectiveness To what extent have the planned activities and outputs been achieved? Why or why not? Are current activities the best way to maximise impact or are there other strategies that might be more effective? To what extent is the program attaining, or expected to attain, its objectives efficiently and in a way that is sustainable?	Program logic Research and large-scale data sources Internal reflection on processes and outcomes Periodic independent evaluation	Milestone reports and amended plans Output reports Reports on program performance outcomes including asset state and change over time at area of investment Periodic independent program evaluation report
Efficiency To what extent has the program attained the highest value out of available resources? How could resources be used more productively and efficiently? What could be done differently to improve implementation, and thereby maximise impact, at an acceptable and sustainable cost?	Auditing Internal reflection on processes and outcomes Periodic independent evaluation	Output reports Financial reports Return on investment reports Periodic independent program evaluation report
Legacy Will the program's impacts continue over time and after the program ceases? How and by whom should the legacy be managed?	Participatory planning and monitoring Internal reflection on processes and outcomes Periodic independent evaluation	Reports on program performance outcomes including asset state and change over time at area of investment Evaluation recommendations.

One method for reporting by outcomes is **performance story reports**. A performance story report is an evidence-based statement about progress towards an NRM goal or target for an asset. The report is supported by multiple lines of quantitative and qualitative evidence, including monitoring data on asset state and trend at each level of outcome identified in the program logic. A performance story report summarises one aspect of an NRM program, initiative or plan. As well as explaining what a program has achieved, it describes the causal links that show how the achievements were accomplished.

Data collected through performance story reports about intermediate outcomes provides evidence to assess progress in achieving asset condition targets, as well as to support program improvement. Performance story reports can then inform decision making about future program arrangements or directions. The Australian Government has invested in further development and trials of this method for evaluating NRM programs at a range of levels.[3]

2.2.4 Reporting

Specific reports are required to show the degree to which investment or intervention achieves progress towards targets and outcomes. They will also show whether there have been expected or unexpected impacts at different time intervals, and serve to meet accountability requirements.

This MERI Framework requires the following reports for NRM programs:

» output reports

» financial reports

» outcome reports

Table 3 above provides an overview of some suggested types of reports to address the key evaluation questions.

Output and financial reports satisfy the governance requirements of funding agencies. They indicate the tangible, immediate and intended results produced through sound management of the agreed inputs. Examples of outputs include goods, services and infrastructure produced by a program or project and meant to help realise its purpose. These may also include changes resulting from an intervention that are needed to achieve the outcomes at the purpose level (adapted from IFAD nd).

Outcome reporting should incorporate multiple lines of evidence from the governance reports and from a range of sources including research and large-scale data sources. Determining roles and responsibilities for coordination of data collection, data analysis and communication of results should be a priority at every level at which MERI occurs and will be a priority in developing MERI strategies and plans for Australian Government NRM programs.

MERI is concerned with reporting on outcomes and progress towards outcomes. Reporting for purposes of determining efficiency and ensuring accountability are also important to demonstrate prudent and responsible investment of public funds in meeting relevant contracted obligations. Reporting requirements will be detailed in implementation plans and other documents as agreed between program partners.

3 A guide for producing performance story reports will be Available in 2009 and will be available on the Australian Government NRM website at www.nrm.gov.au.

2.2.5 Improvement

Improvement results from continuous review, learning and adaptation. In the NRM context, a learning environment needs to be created where all parties are encouraged to reflect critically on the efficacy of particular strategies, investments and activities. Critical reflection enables those involved in a program to learn from mistakes, to generate ideas for making improvements, and to provide strategic and operational guidance.

All parties involved in designing and implementing NRM programs will be assisted in this adaptive management process through improved access to current science, research and information about on-ground experience. The Australian Government has invested in making that information more accessible through The NRM Toolbar, a knowledge system designed by the Knowledge for Regional NRM Program at Land & Water Australia.[4]

The NRM Toolbar aims to provide:

» a first point of call for searching for NRM knowledge on the Internet

» a facility for sharing knowledge between regional bodies

» mechanisms for regions to feed knowledge into research and development organsations and policy.

The MERI Framework recommends that management of NRM programs incorporates, as a priority, regular assessment of progress towards outcomes to determine what is working and what is not. Program improvement then becomes standard practice as participants are increasingly aware of how to adapt for continuous improvement.

Within the participatory NRM MERI approach, program logic and outcome reports are integral tools to assist reflection on impact, assessment of the effectiveness of different strategies and development of alternative pathways for action to achieve desired outcomes.

Effective management depends on using MERI strategically. The MERI Framework provides for evaluation to inform both internal and external audiences who require evaluation results for different purposes. Participatory evaluation methods facilitate internal learning.

NRM program managers are encouraged to develop continuous program evaluation plans that allow time and resources for active participation. A utilisation and learning strategy involves a plan of action to maximise the chances of monitoring and evaluation data being used, including how best to report the findings. A guide to Organisational Learning and Improvement will support this component of the MERI Framework.[5]

4 The NRM Toolbar can be accessed at www.lwa.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/65/58.pdf&siteID=1&str_title=NRM%20Toolbar%20-%20Concept%20Design.pdf.

5 For further information on designing and conducting evaluations, see the Australasian Evaluation Society's *Guidelines for the ethical conduct of evaluations* (2006).

Section 3
NRM Assets and Indicators

Setting goals and targets for NRM asset condition is an essential component of MERI, although it can be challenging. Target and goal setting requires baseline condition information, but such information is often limited. Quantitative and qualitative information needs to be considered when making investment prioritisation decisions. However, in many instances, changes as a result of investment are only apparent in the long term, and will be influenced by factors that go beyond program funding cycles.

The coarse scale at which the state of and change over time in NRM asset condition are monitored does not always correspond to the scale of investment. The assumptions made about the likely effects of management actions will, of necessity, be influenced by these temporal and spatial issues. In response, NRM plans will need to be refined over time as information about ecological and supporting social and economic processes improves. Governments will take these uncertainties into account in assessing progress towards targets for immediate and intermediate outcomes and targets for longer-term outcomes.

Setting targets at all levels of the program logic, using agreed indicators and associated protocols[6] for monitoring and reporting on progress, will:

» promote consistency in setting and measuring progress towards targets within and across regions

» facilitate reporting on progress towards outcomes at all jurisdictional levels

» allow comparison of program achievements with assessments of condition or trends in NRM assets

» facilitate a learning environment in which program managers and participants adapt practices, strategies and investment plans for continuous improvement.

Progress towards targets must be reviewed regularly to ensure that targets are relevant and appropriate and to inform an adaptive management approach. Reviews should aim to illustrate trends and changes in NRM practices, asset condition and ecosystem function. They will thus contribute to the development of the body of scientific knowledge about how to effect change in the condition of assets.

The indicative asset classes and indicator categories are set out in a separate document, *Natural Resource Management Assets and Indicators*, to allow for continuous development of relevant indicators and associated measurement protocols. Indicators can be used to guide collection and analysis of quantitative and qualitative data for assessing changes in the state and trends of NRM assets.

6 The National Land & Water Resources Audit has developed protocols to guide standardised use of the nationally agreed indicators. The protocols can be accessed at http://nlwra.gov.au/Footer/Advanced_Search/?searchCriteria=protocol&bol_saveResults=true&filterSites=9&x=41&y=9.

3.1 Targets

In this MERI Framework, there are three types of targets:

» **aspirational targets**—broad statements about the desired condition of NRM assets in the longer term

» **longer-term targets**—specific time-bound and measurable targets, usually relating to maintenance of and/or improvement in the state and trend of identified classes of NRM assets

» **immediate–intermediate targets**—targets relating to management activities, capacity building and/or intermediate outcomes including change by way of maintenance of and/or improvement in NRM asset condition. Performance of management actions will be reported at the intermediate outcome level to demonstrate progress towards the longer-term outcomes.

When establishing program plans, NRM organisations should set targets consistent with agreed classes of NRM assets that are relevant to their particular context. Indicators provide for consistent monitoring of asset state and trend.

Reporting on progress against longer-term outcomes in a way that is consistent with identified NRM asset classes will require data collection and collation across a number of NRM program agencies and partners.

3.2 Indicators

Indicators enable the monitoring of asset state and change over time and form the basis of a logical monitoring framework at a range of scales.

Significant changes in the condition of some assets may not be measurable for periods ranging from five to 50 years. However, NRM interventions undertaken by government are usually structured as programs of between five and seven years' duration. Processes to measure and report changes in asset state and trends and the performance of NRM interventions therefore need to encompass a range of time scales. Recognising this, the MERI approach introduces reporting by a range of outcomes to reflect logical progress towards longer-term targets.

Indicators should be selected according to the principles of cost, simplicity, consistency and practicality as well as their capacity to deliver information across the full jurisdictional scale. Indicators at the area of investment are necessary for monitoring the results of a specific activity. Indicators can be a combination of agreed national indicators and surrogate indicators. 'Surrogate indicators' are measures developed to monitor the performance of an activity where asset condition monitoring is non-existent or not appropriate.

Section 4
Data Management Guidelines for NRM Programs

To maximise its use and comparability, data should be developed and maintained to meet agreed international or national guidelines for the management of spatial information, such as those endorsed by the National Land & Water Resources Audit, ANZLIC—the Spatial Information Council and the Australian Government Information Management Office.[7] Those principles are summarised below.

Principles for managing NRM information

Importance—decision making in NRM will be supported by appropriate data and information.

Accessibility—data and information relevant to NRM will be easy to find and access for a wide range of users and, where possible, provided free online.

Availability—data and information relevant to NRM will only be withheld in exceptional circumstances (such as privacy or commercial-in-confidence). In these cases, the reasons for withholding will be made explicit.

Standardisation—nationally agreed standards for data and information collection, management, transfer and reporting will be implemented to underpin the infrastructure.

Reciprocality—arrangements for data and information sharing will allow two-way flows between national, jurisdictional and regional NRM processes.

Responsibility—roles and responsibilities for distributed information management (including collection, custodianship and reporting) will be clearly identified and agreed.

Priority—fundamental (key) information required for NRM should be given priority for collection and access.

This MERI Framework provides two sets of guidelines that support the principles:

» guidelines to ensure quality **data collection** methods

» **data management** guidelines.

7 The National Land & Water Resources Audit and ANZLIC — the Spatial Information Council have worked together to develop a vision, guiding principles and way forward for improving the Australian natural resources information infrastructure (ANRII). They can be accessed at http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/96/89.pdf&siteID=9&str_title=ANRII%20Vision.pdf.

4.1 Data collection methods

The following guidelines are intended to maximise the quality of data produced and ensure that it is as widely applicable as possible.

4.1.1 Applicability

» Data should be able to be used for **multiple purposes**, wherever possible. In particular, data should be collected so that it can be used for both monitoring asset state and change over time and assessing program outcomes. This requires data to be collected in such a way as to permit its use at a range of scales and levels (national, state/territory, regional and local).

» Where practical and relevant, data should also be **spatially referenced** to an appropriate resolution (using spatial standards as necessary).

4.1.2 Efficiency

To ensure cost efficiencies are embedded within the data infrastructure required to support the MERI Framework:

» Data should be collected once with a view to **supporting many activities**. For example, a common set of data could be used to support the many regional, national and international reporting obligations.

» Existing state, territory and Australian Government initiatives for **developing and sharing data** should be built on to avoid duplication of effort, and to maximise the benefits from earlier investment in data collection.

4.2 Data management guidelines

Data will be managed in adherence to the **NRM data management principles** and in accordance with best management practice standards as outlined below.

4.2.1 Accessibility

To ensure that users can easily obtain data and/or find out whether suitable data already exist:

» Data must be **easily accessible** to all sectors of the community in format, location and cost and under conditions that do not inhibit its use.

» Fundamental jurisdictional datasets must be documented in the **Australian Spatial Data Directory**. The documentation must be current and should provide enough information for users to determine whether the data is suitable for its intended purpose.

The Australian Spatial Data Directory (ASDD) is an online directory that enables people to discover what spatial data is available throughout Australia. The information contained in the directory is called metadata. Metadata is a summary document about the dataset, including the geographic area that the dataset covers, the custodian, who to contact to obtain a copy of the dataset and other useful information that helps people decide whether or not the dataset is useful for their particular purpose.

The ASDD was launched in 1998 and now contains over 30,000 entries held on 24 nodes around Australia. The ASDD allows the concurrent interrogation of the existing nodes by a user with an internet browser.

The ASDD provides a central access point over the internet to essential information about spatial data held at a variety of locations throughout Australia and New Zealand. This information is accessible on-line to people in industry, government, education and the general community.[8]

8 The main entry point to the Australian Spatial Data Directory can be found at <www.ga.gov.au/asdd/>.

» Where practicable, data must be **accessible through web-based technology**, in accordance with Australian Government information standards.

4.2.2 Consistency

Reporting of consistent information products will be through agreed mechanisms, including authoritative jurisdictional and theme-based web portals. Reporting will thus be able to support processes such as the National Land & Water Resources Audit and state of environment and state of forests reporting.

Data infrastructure under this MERI Framework must be:

» based on **national standards** for sampling, measuring, interpreting and managing data (where such standards are available)

» capable of meeting reporting, performance management and review requirements at local, regional, state/territory and national levels, which entails being used at various scales (national, state, regional and local) and for various purposes (e.g. for monitoring asset state and change over time and assessing program outcomes)

» easily **accessible** to all stakeholders.

4.2.3 Interoperability

Data transfer will be through national protocols, including the use of agreed formats, content and vocabulary.

4.2.4 Custodianship

The development of agreed custodianship arrangements for fundamental datasets will be important for developing an information base for NRM. Agreed custodianship needs to be defined and implemented at national, state/territory and regional levels to ensure management efficiency and authoritative points of truth for data and information.

4.2.5 Data exchange and management

How data will be used is an important question, as consistent methodologies and protocols for data exchange and management may be required. ANZLIC and the National Land & Water Resources Audit have already put considerable effort into developing consistent methodologies for data management. *The Natural Resources Information Management Toolkit* was prepared by National Land & Water Resources Audit and ANZLIC – the Spatial Information Council assists NRM groups discover, access, visualise and manage their data and information. These methods should be adopted at all levels of the NRM system.[9]

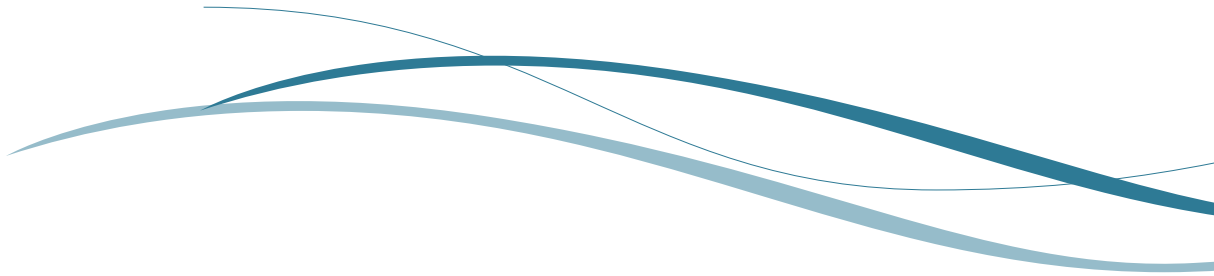
9 The Toolkit can be accessed at http://nlwra.gov.au/toolkit/index.html

Glossary

The glossary focuses on terms relating to evaluation and results-based management in the NRM context. Its aim is to clarify concepts and reduce the confusion frequently encountered in these areas.

Evaluation is a field where development partners from a range of contexts and in distributed networks work together and need a common vocabulary. Over the years, however, definitions evolved that were at times ambiguous, even confusing, particularly to newcomers to NRM. With this glossary, the Australian Government hopes to facilitate and improve dialogue and understanding among all those who are involved in national NRM activities and their evaluation.

This glossary should serve as a valuable reference guide in evaluation training and in practical NRM work. The terms and their definitions are derived from a range of respected sources, including the Organisation for Economic Co-operation and Development, the International Federation of Agricultural Development and the International Union for Conservation of Nature. The *Encyclopedia of Evaluation* (ed. Mathison 2005) was also consulted. The terms have been adapted to fit the NRM context, and some NRM-specific terms are also included.



GLOSSARY

A	
accountability	The obligation to demonstrate that work has been conducted in compliance with agreed rules and standards or to report fairly and accurately on performance results in terms of mandated roles and/or plans. This may require a careful, even legally defensible, demonstration that the work is consistent with the contract terms. For evaluators, it connotes the responsibility to provide accurate, fair and credible monitoring reports and performance assessments. For public sector managers and policy makers, accountability is to taxpayers (Adapted from IUCN 2002).
adaptive management	An active culture of reflection comprising effective evaluation, rewards for thinking and reflection, appropriate communication for all project participants, and provision of mechanisms for incorporating learning into planning and management. Within the context of adaptive management, evaluation is an important organisational learning tool and business management practice through which lessons can be drawn and hypotheses tested to guide future work and form part of the corporate history (Adapted from IUCN 2002).
appropriateness	A determination made through comparing the program with the needs of the intended beneficiaries using any of the techniques of needs analysis. Alternatively, the program could be evaluated in terms of its compliance with process (ed. Mathison 2005).
aspirational targets	Broad statements about the desired condition of NRM assets in the longer term.
assessment	A process (which may or may not be systematic) of gathering information, analysing it, then making a judgment on the basis of the information about the success of a project or program (IFAD nd).
asset	A useful thing or quality; something that has a value. In the NRM context, assets can be classified as follows: » **human capital**—labour and influences on the productivity of labour, including education, skills and health » **social capital**—see definition under *social capital* below » **natural capital**—land, water, atmosphere and biological resources » **physical capital**—value produced by economic activity, including infrastructure, equipment and technology » **financial capital**—savings and credit.
assumption	Any external factor (such as an event, condition or decision) that could affect the progress or success of a program. Assumptions are necessary to achieve program objectives, but are largely or completely beyond the control of project managers. They are worded as positive conditions. **Initial assumptions** are those conditions perceived to be essential for the success of a project or program. **Critical assumptions** are those conditions perceived to threaten the implementation of a project or program (IFAD nd).
attribution	The causal link of one thing to another. For example, the extent to which observed (or expected) changes can be linked to a specific intervention in view of the effects of other interventions or confounding factors (IFAD nd).

audit	An independent, objective assurance activity designed to add value and improve an organisation's operations. An audit can help an organisation accomplish its objectives by bringing a systematic, disciplined approach to assessing and improving the effectiveness of risk management, control and governance processes. Note, however, that there is a difference between financial and performance audits. **Financial audits** focus on compliance with applicable statutes and regulations. **Performance audits** are concerned with relevance, economy, efficiency and effectiveness. **Internal audits** provide an assessment of internal controls undertaken by a unit reporting to management. **External audits** are conducted by an independent organisation (IUCN 2002).
B	
baseline information	Information—usually consisting of facts and figures collected at the initial stages of a project—that provides a basis for measuring progress in achieving project objectives and outputs (IFAD nd).
benchmark	A reference point or standard against which performance or achievements can be compared. A benchmark might refer to what has been achieved in the past by other comparable organisations, or what could reasonably have been achieved under the circumstances (IFAD nd).
C	
capacity	The ability of individuals and organisations to undertake activities and projects effectively, efficiently and in a sustainable manner (IFAD nd).
capacity building	Enhancing the ability of individuals, groups and organisations to effectively, efficiently and in a sustainable manner achieve NRM outcomes. Examples of capacity building outcomes in the NRM context include enhanced awareness, skills, knowledge, motivation, commitment and confidence.
causal relationship	A logical connection or cause-and-effect linkage existing in the achievement of related, interdependent results. Generally the term refers to plausible linkages, not statistically accurate relationships (IFAD nd).
critical reflection	The process of questioning and analysing experiences, observations, theories, beliefs and/or assumptions (IFAD nd).
culturally sensitive	Any traditional or cultural issue that in accordance with traditional laws and customs, including as advised by Aboriginal and Torres Strait Islander elders, is considered to be sensitive, or of a secret or sacred nature.
E	
effect	An intended or unintended change resulting directly or indirectly from an intervention.
effectiveness	A measure of the extent to which a program, project or initiative has attained, or is expected to attain, its relevant objectives efficiently and in a sustainable way (adapted from IFAD nd).
efficacy	The extent to which a program's objectives were achieved or expected to be achieved, taking into account their relative importance (IFAD nd).

efficiency	The notion of getting the highest value out of program or project resources (OECD 2002).
evaluation	In the NRM context, a periodic assessment of the impact, appropriateness, effectiveness, efficiency and legacy of a policy, program or project 'through a set of applied research techniques to generate systematic information that can help improve performance' (IUCN 2002). It includes formal external, independent evaluations and 'self-evaluation processes [that] can help to build an internal culture of reflection and evaluation, as well as stronger ownership of the results' (IUCN 2002).
evaluation questions	A breakdown of the key evaluation question. Within the context of MERI for NRM, these questions link to the outcomes in the different levels of the program logic and to the five broad evaluation categories—appropriateness, impact, effectiveness, efficiency and legacy.
F	
foundational activities	Activities to inform investment, including planning, benchmarking, assessment and prioritisation.
G	
goal	The higher-order objective to which a program is intended to contribute.
governance report	A report on whether a funded organisation has managed funds in an efficient, effective and appropriate manner, and addressed specific concerns about the probity and propriety of that management. In particular, the report focuses on the organisation's corporate governance, financial management and performance (Adapted from Department of Finance and Administration 2006).
I	
immediate outcomes	Easily identifiable activities and related immediate goods, services and infrastructure.
impact	A change in the condition of biophysical, social, economic and/or institutional assets. An impact may be positive or negative, primary or secondary, short term or long term, direct or indirect, and/or intended or unintended. Impacts are sometimes realised after the formal project is completed (Adapted from IUCN 2002).
independent evaluation	An evaluation carried out by entities and persons free of the control of those responsible for the design and implementation of the program or intervention. Independence implies freedom from political influence and organisational pressure. It is characterised by full access to information and by full autonomy in carrying out investigations and reporting findings (OECD 2002).
indicator	A quantitative or qualitative factor or variable that provides a simple and reliable basis for assessing achievement, change or performance. It is a unit of information measured over time that can help show changes in a specific condition. A given goal or objective can have multiple indicators (IFAD nd).
Indigenous organisation	Includes a community council, council of elders, registered native title body corporate, prescribed body corporate, Indigenous corporation or Indigenous incorporated body.
in-kind contribution	A non-cash contribution to achieving program or project outcomes.
information management system	A system of collecting, collating and organising data that should provide selective information and reports to management to assist in monitoring and controlling program organisation, resources, activities and results.

input	The financial, human and material resources necessary to produce the intended outputs of a program or project (IFAD nd).
intellectual property	Includes all copyright, all rights in relation to inventions (including patent rights), plant varieties, registered and unregistered trademarks (including service marks), registered designs and circuit layouts, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields, as well as traditional Indigenous knowledge.
institutional	Of or pertaining to a policy, organisation, rule, agreement, value or cultural norm.
intermediate outcomes	A combination of biophysical and non-biophysical results that lead to change by way of maintenance of and/or improvement in NRM asset condition.
K	
key evaluation question	The question to be addressed in order to assess the worth or significance of a project, program or initiative in relation to its goals. This overarching question frames the evaluation. A number of more specific evaluation questions will sit below the key evaluation question relating to outcome statements in the program logic.
L	
learning	The process of reflecting on experience to identify how a situation or future actions could be improved and then using this knowledge to make actual improvements. This can be individual or group-based. Learning involves applying lessons learned to future actions, which provides the basis for another cycle of learning (IFAD nd).
legacy	The enduring consequences of past investments, policies or actions that can be captured and/or bequeathed.
longer-term outcomes	Tangible and measurable changes resulting from maintenance of and/or improvement in NRM assets, including NRM organisations and institutions.
longer-term targets	Specific time-bound and measurable targets, usually relating to the state and trend of NRM assets.
M	
MERI	Monitoring, evaluation, reporting and improvement—an approach that is iterative and integrative and aims to result in learning and adaptive management.
monitoring	The regular collection and analysis of information to assist timely decision making, ensure accountability and provide the basis for evaluation and learning. It is a continuing function that uses methodical collection of data to provide management and the main stakeholders of an ongoing project or program with early indications of progress and achievement of objectives (IFAD nd).
monitoring and evaluation	Monitoring and evaluation are two processes that often overlap and are part of a systematic learning process. The combination of monitoring and evaluation provides the knowledge required for effective program management and reporting and accountability responsibilities (Adapted from IFAD nd and Dart & Davies 2003).

most significant change(MSC)	A form of participatory evaluation in which program stakeholders are involved in analysing data and deciding the sorts of changes to be recorded. MSC involves the 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. MSC can occur throughout a program cycle and provides information to help people manage programs. MSC provides information about impact and outcomes that can be used to help assess the performance of a program as a whole (adapted from Dart & Davies 2003).
N	
NRM	Natural resource management, which includes any activity relating to managing the use, development or conservation of one or more of the following: soil, water, vegetation and biodiversity, including coastal and marine areas and natural values of nationally listed heritage places.
NRM resource managers	Managers (including individuals, organisations, institutions and communities) of natural and management resources.
O	
outcome	The results achieved at the defined levels of the outcomes hierarchy in the program logic.
outputs	The tangible (easily measurable and practical), immediate and intended results to be produced through sound management of the agreed inputs. Examples of outputs include goods, services or infrastructure produced by a program or project and meant to help realise its purpose. These may also include changes resulting from an intervention that are needed to achieve the outcomes at the purpose level (IFAD nd).
P	
participation	One or more processes in which an individual or group takes part in specific decision making and action, and over which they may exercise specific controls. It is often used to refer specifically to processes in which primary stakeholders take an active part in planning and decision making, implementation, learning and evaluation (IFAD nd).
participatory evaluation	An evaluation method in which representatives of agencies and stakeholders (including beneficiaries) work together in designing, carrying out and interpreting an evaluation (IUCN 2002).
performance	The degree to which an intervention operates according to specific criteria, standards or guidelines or achieves results in accordance with stated goals or plans (adapted from IUCN 2002).
performance story report	An evidence-based statement about progress towards an NRM goal or target for an asset. The report is supported by multiple lines of quantitative and qualitative evidence, including monitoring data on asset state and trend at each level of outcome identified in the program logic. A performance story report summarises one aspect of an NRM program, initiative or plan. As well as explaining what a program has achieved, it describes the causal links that show how the achievements were accomplished.
primary stakeholders	The main intended beneficiaries of a program, project or activity (IFAD nd).
process evaluation	An evaluation aimed at describing and understanding the internal dynamics of a project, program or institution (IFAD nd).

program logic	The rationale behind a program—what are understood to be the cause-and-effect relationships between program activities, outputs, intermediate outcomes and longer-term desired outcomes. Represented as a diagram or matrix, program logic shows a series of expected consequences, not just a sequence of events. It thus facilitates planning, execution and evaluation of an intervention (adapted from Dart & Davies 2003 and OECD 2002).
project	An intervention that consists of a set of planned, interrelated activities designed to achieve defined objectives within a given budget and a specified period of time.
purpose	The publicly stated objectives of a program or project. It is a synthesis of the outcomes, and presents the actual expected contribution of the project towards the ideal situation described in the goal. It is the highest level of result that should occur as a direct consequence of interventions during the life of the project. The project is therefore committed to achieve this contribution within an agreed timeframe and budget. The purpose statements are written in the present tense or present continuous tense (IUCN 2002.)
Q	
qualitative	Something that is not summarised in numerical form, such as minutes from meetings and general notes from observations. Qualitative data normally describe people's knowledge, attitudes or behaviours (IFAD nd).
quantitative	Something measured or measurable by, or concerned with, quantity and expressed in numbers or quantities (IFAD nd).
R	
recommendations	Proposals aimed at enhancing the effectiveness, quality or efficiency of a program or strategy; at redesigning the objectives; and/or at the reallocation of resources. Recommendations should be linked to conclusions.
resource condition monitoring	An ongoing process of collecting and analysing quantitative and qualitative data and information about NRM assets including environmental, economic and social assets.
S	
sample	A representative part of a population selected in order to determine parameters or characteristics of the whole population (IFAD nd).
social capital	Both an asset in the form of reciprocal claims on others that enhance the adoption of management practices, and a means of defining the social and institutional pathways through which adoption decisions are externally influenced. It contributes to the effective operation of networks and channels through which government programs can effectively support communities in their efforts to improve NRM. It includes the generation and maintenance of social norms that are supportive of behaviours and actions that contribute to improved natural resource condition, while sanctioning behaviours that may be detrimental (Adapted from Nelson, Webb & Bryon 2006).
stakeholder	An agency, organisation, group or individual who has a direct or indirect interest in a project or program, or who positively or negatively affects or is affected by the implementation and outcome of it (IFAD nd).
stakeholder participation	Active involvement by stakeholders in the design, management and monitoring of a project or program (IFAD nd).

surrogate indicators	Measures developed to monitor the performance of an activity where asset condition monitoring is non-existent or not appropriate.
sustainability	The likelihood that the positive effects of a project or program will meet the needs of Australians today, while conserving the nation's ecosystems for the benefit of future generations.
T	
target	A specified objective that indicates the number, timing and location of that which is to be realised for a policy, program or activity (IFAD nd).
target group	The specific group for whose benefit a project or program is undertaken (IFAD nd).
triangulation	The practice of employing several research tools within the same research design. Triangulation enables particular research parts or findings to be viewed from more than one perspective and hence increases validity.
V	
validity	The extent to which the data collection strategies and instruments measure what they purport to measure (IUCN 2002).
validation	The process of cross-checking to ensure that the data obtained from one monitoring method is confirmed by the data obtained from a different method (IFAD nd).

Resources References and Additional Reading

MERI guides

The Australian Government is developing a series of guides to support the implementation of the MERI Framework including:

» Program logic

» NRM asset classes and indicators

» Performance story reporting

» Organisational learning and program improvement

» MERI training manuals.

Australian Government frameworks

National NRM Monitoring and Evaluation Framework, 2003,
www.nrm.gov.au/publications/frameworks/me-framework.html

National Standards and Targets Framework, 2003,
www.nrm.gov.au/publications/frameworks/standards-targets-framework.html

Framework for Future NRM Programmes, 2006,
www.nrm.gov.au/publications/frameworks/future-programmes.html

References

Australasian Evaluation Society Inc. 2006, *Guidelines for the ethical conduct of evaluations*, http://www.aes.asn.au/about/Documents%20-%20ongoing/guidelines_for_the_ethical_conduct_of_evaluations.pdf

Australian National Audit Office 2008, *Regional delivery model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality*, Audit Report No. 21 2007–08, Commonwealth of Australia, Canberra.

Dart, JJ & Davies, R 2003, *Quick-start guide: a self-help guide for implementing the Most Significant Change technique (MSC)*, www.clearhorizon.com.au/wpdl/DD-2003-MSC_QuickStart.pdf.

Department of Finance and Administration 2006, *Report on the operations of the Office of Evaluation and Audit (Indigenous Programs) for 2005–06,* http://www.finance.gov.au/publications/annualreport05-06/oea_ip/governance_audits.html

IFAD (International Federation of Agricultural Development) nd. *Managing for impactin rural development: a guide for project M&E, Annex A: Glossary of M&E concepts and terms*, www.ifad.org/evaluation/guide/annexa/index.htm.

IUCN (International Union for Conservation of Nature) 2001, *The IUCN Evaluation Policy* 2001, www.iucn.org/programme/eval/policy.htm.

IUCN 2002, *Glossary of terms*, http://www.iucn.org/programme/eval/documents2/training_courses/core_course/more_ref/glossary_04.pdf.

IUCN nd, *Monitoring and evaluation: methods and tools*, www.iucn.org/programme/eval/methods.htm.

Land & Water Australia 2007, *NRM Toolbar*, www.nrmtoolbar.net.au.

National Land & Water Resources Audit 2008, *Status of Indicator Agreement*, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/105/59.pdf&siteID=9&str_title=Indicator%20Status%20March%202008.pdf.

National Land & Water Resources Audit & ANZLIC nd, *Building capacity to implement natural resources information management solutions toolkit*, http://nlwra.gov.au/Publications_and_Tools/Toolkit/index.aspx.

National Land & Water Resources Audit, various protocols for measuring against indicators, http://nlwra.gov.au/Footer/Advanced_Search/?searchCriteria=protocol&bol_saveResults=true&filterSites=9&x=41&y=9

Nelson, R, Webb, T & Bryon, I 2006, *Socioeconomic data: prioritising collection to support Australian Government natural resource management programs: principles and priorities*, Bureau of Rural Sciences & Australian Bureau of Agricultural and Resource Economics, report prepared for the National Land & Water Resources Audit, https://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/102/16.pdf&siteID=9&str_title=SENCC%20indicators.pdf.

OECD (Organisation for Economic Co-operation and Development) 2002, *Glossary of key terms in evaluation and results based management*, www.oecd.org/dataoecd/29/21/2754804.pdf.

Mathison, S (ed) 2005, *Encyclopedia of evaluation*, Sage Publications, California.

Additional Reading

Adrien, M-H & MacPherson, N 2004, *A guide for the planning and conduct of IUCN strategic reviews*, IUCN, Cambridge.

Australian Bureau of Agricultural and Resource Economics 2005, *Signposts for Australian agriculture: a framework for developing economic and social indicators*, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/79/96.pdf&siteID=9&str_title=ABA15_2_ABARE_review.pdf.

Byron, I, Curtis, A & MacKay, J 2006, *Providing social and economic data to support regional natural resource management in the Burnett Mary*, Bureau of Rural Sciences, Canberra.

Bryon, I, Nelson, R, Webb, T & Cody, K 2006, *Socio-economic indicators and protocols for the National NRM M&E Framework: capacity of land managers to adopt sustainable management practice*, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/86/19.pdf&siteID=9&str_title=BRR45_socioeconomic_indicators_and_protocls_for_the_national_nrm_m_and_e_framework.pdf.

Carroll, J & McKenna, J 2001, 'Theory to practice: using the logic model to organize and report research results in a collaborative project', *Journal of Family and Consumer Science*, vol. 93, no. 4, pp. 63–65.

Cavaye, J 2003, *Integrating economic and social issues in regional natural resource management planning: a framework for regional NRM bodies*, National Action Plan for Salinity and Water Quality, Queensland Department of Natural Resources, Mines and Water.

Cavaye, J 2005, *Capacity assessment for regional NRM: capacity assessment and guidelines*, Capacity Building State-level Investment Project CB03, National Action Plan for Salinity and Water Quality, Queensland Department of Natural Resources, Mines and Water.

Clouston, B, Stanley, J & Binney, J 2004, *Compiling regional social and economic profiles: a practical guide for regional NRM groups in Queensland*, State-level Investment Project SE01, National Action Plan for Salinity and Water Quality, Queensland Department of Natural Resources, Mines and Water.

Colliver, R 2006, *Indicators and measures for the social asset in NRM*, The Training and Development Group, Corangamite Catchment Management Authority, Victoria.

Corangamite Catchment Management Authority 2003, *Corangamite Regional Catchment Strategy 2003–08*, Corangamite Catchment Management Authority, Colac, Victoria, www.ccma.vic.gov.au/rcs/resources/pdfs/ccma_rcs_final_web.pdf.

Dart, JJ 1999, 'The tale behind the performance story approach', *Evaluation News and Comment*, vol. 8, no. 1, pp. 12–13.

Dart, JJ & Davies, RJ 2003, 'A dialogical story-based evaluation tool: the most significant change technique', *American Journal of Evaluation*, vol. 24, pp. 137–55.

Fenton, M 2004, *Socio-economic indicators for NRM: indicators of capacity of performance and change in regional NRM bodies*, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/80/49.pdf&siteID=9&str_title=EBC1_Socio-ec_Indicators_report.pdf.

Fenton, M 2006, *Socio-economic indicators and protocols for the national NRM M&E Framework: social and institutional foundations of NRM*, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/96/86.pdf&siteID=9&str_title=Indicator%20&%20Protocols%20-%20Social%20Institutional%20Foundations%20of%20NRM.pdf.

Fenton, M 2007, *An evaluation of the NRM Facilitator Network*, report prepared for the Australian Government Natural Resource Management Division, Canberra, http://www.nrm.gov.au/publications/books/evaluation-facilitator-network.html.

Fenton, M & Rickert, A 2006, *Monitoring and evaluating the performance of NAPSWQ regional bodies in Queensland*, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/79/94.pdf&siteID=9&str_title=EBC2_State_Indicators_Report.pdf.

Fenton, M & Rickert, A 2008, *A national baseline of the social and institutional foundations of natural resource management programs*, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/105/01.pdf&siteID=9&str_title=National%20rep3.pdf.

Hanslip, M & Byron, I 2007, *Sourcebook for social and economic surveys: assessing land managers' capacity to change and adopt sustainable management practices*, Bureau of Rural Sciences, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/101/40.pdf&siteID=9&str_title=Source%20book%20final%20for%20printers%20-%20secure.pdf.

Mayne, J 2004, 'Reporting on outcomes: setting performance expectations and telling performance stories', *Canadian Journal of Program Evaluation*, vol. 19, no. 1, pp. 31–60.

Mayne, J 2006, 'Performance studies: the missing link?' *Canadian Journal of Program Evaluation*, vol. 21, no. 2, pp. 201–08.

Millar, A, Simeone, R & Carnevale, J 2001, 'Logic models: a systems tool for performance management', *Evaluation and Program Planning*, vol. 24, pp. 73–81.

Natural Resources Commission NSW 2005, *Standards for quality natural resource management*, www.nrc.nsw.gov.au/_documents/Standard%20for%20quality%20NRM.pdf.

Nelson, R, Brown, PR, Darbas, T, Kokic, P & Cody, K 2007, *The potential to map the adaptive capacity of Australian land managers for NRM policy using ABS data,* Commonwealth Scientific and Industrial Research Organisation & Australian Bureau of Agricultural and Resource Economics, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/102/17.pdf&siteID=9&str_title=CSE49%20Final%20-%20Adaptive%20Capacity%20using%20ABS%20Data%20(Rev%2029%20Sep%202007%20(2)).pdf.

Nelson, R, Webb, T & Bryon, I 2006, *Socioeconomic data: prioritising collection to support Australian Government natural resource management programs: principles and priorities*, Bureau of Rural Sciences & Australian Bureau of Agricultural and Resource Economics, report prepared for the National Land & Water Resources Audit, https://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/102/16.pdf&siteID=9&str_title=SENCC%20indicators.pdf.

Schwartz, R & Mayne, J (eds) 2005, *Quality matters: seeking confidence in evaluation, performance auditing and performance reporting*, Transaction Publishers, Canada.

Smith, T & Sincock, A 2004, *Social and economic data sources for natural resource management*, Australian Bureau of Statistics, report prepared for the National Land & Water Resources Audit, Canberra, http://nlwra.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/79/97.pdf&siteID=9&str_title=ABS_Socio-Economic_Data_Sources_disc_paper.pdf.

Stanley, J, Clouston, B & Binney, J 2005, *Understanding social and economic influences on natural resource management decisions*, State-level Investment Project SE05, National Action Plan for Salinity and Water Quality, Queensland Department of Natural Resources, Mines and Water.

Imbach, AC (ed.) 2000, *Finding the way: a practical guide to the organisation and execution of the self-evaluation processes of projects centred in sustainability*, IUCN, http://www.iucn.org/programme/eval/documents2/finding_way/finding_way_eng.pdf.

Thomson, D & Pepperdine, S 2003, *Assessing community capacity for riparian restoration*, Landscape & Social Research Pty Ltd, report prepared for Land & Water Australia, Canberra.

URS Australian 2003, *Defining social assets for the Salinity Investment Framework*, report prepared for the Western Australian Water and Rivers Commission, Perth.

Walters, CJ & Holling, CS 1990, 'Large-scale management experiments and learning by doing', *Ecology*, vol. 71, no. 6, pp. 2060–68.

Webb, T, Cody, K, Harrison, B, Sincock, A & Mues, C 2004, *Social and economic information for NRM: an initial discussion paper*, National Land & Water Resources Audit, Canberra.