



**MONITORING, EVALUATION
AND REPORTING:
A COMPARATIVE REVIEW OF
THREE INSTITUTIONAL
MODELS**

June 2007



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JUNE 2007

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List of acronyms

AASB	Australian Accounting Standards Board
ASIC	Australian Securities and Investments Commission
BOM	Bureau of Meteorology of Australia
CEO	Chief Executive Officer
CMA	Catchment Management Authority
CSIRO	Commonwealth Scientific and Research Organisation
EHMP	Ecosystem Health Monitoring Program
MER	Monitoring, Evaluation and Reporting
NHT	National Heritage Trust
NRC	Natural Resources Commission
NRM	Natural Resource Management
NSW	New South Wales
SEQ	South East Queensland
SEQRWQMS	South East Queensland Regional Water Quality Management Strategy

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Document No. DO7/2006

ISBN: 1 921050 306

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1 Introduction

The NSW Government has endorsed a strategy for a 'monitoring, evaluation and reporting' (MER) system for natural resource management (NRM) in NSW.¹ The Natural Resources and Environment CEO Cluster Group² and the relevant NSW agencies and CMAs are currently implementing the strategy. The system is critical for informing policy and investment decisions of natural resource managers at a range of scales. The NRC and others will also rely on the outputs to assess progress against the state-wide targets.

The NRC recognises that implementing MER for NRM is challenging and traditionally has not been done well.³ It has undertaken a brief comparative review of three institutional models in order to assess why MER is effective in other jurisdictions and industries. The purpose of the review is to gain some insights for all the parties involved in implementing the MER system for NRM in NSW. This short paper presents the NRC's findings.

The three MER models the NRC reviewed⁴ are:

- corporate financial reporting
- meteorological reporting by the Bureau of Meteorology of Australia (BOM)
- the Ecosystem Health Monitoring Program (EHMP) undertaken in south-east Queensland by the Healthy Waterways partnership.

The NRC identified five attributes of effective MER systems based on its analysis of these models. Chapter 2 describes these attributes and chapter 3 provides a more detailed overview of the research and the specific characteristics of each of the three MER models.

1 NSW Natural Resources and Environment CEO Cluster Group (2006), *NSW Natural Resources Monitoring, Evaluation and Reporting Strategy*, August 2006

2 The Natural Resources and Environment CEO Cluster Group comprises the CEOs of government agencies responsible for NRM related issues including the Department of Environment and Climate Change, Department of Primary Industries, Department of Lands, Department of Water and Energy and the NSW Treasury.

3 For example, monitoring resource condition is a long-term exercise and there can be long lag times between on-ground investment and actual outcomes. This timing is often at odds with government cycles for reporting and accountability.

4 The NRC selected the examples based on a rapid assessment of several models and peer advice.

2 Attributes of an effective MER system

The NRC identified five attributes of effective MER systems from its comparative review of institutional models. It found that two are particularly important - having strong drivers and ensuring information generated from the system is useful to investors and decision makers. The following sections describe all of the attributes in more detail.

2.1 Having strong drivers

Strong drivers are important for establishing an MER system and ensuring its viability is maintained. These provide the incentive for governments or other parties to invest in the system.

The usual key driver is that investors and decision-makers require or demand the information generated to inform their decisions. For example private investors and governments have demanded reliable information from corporate financial reporting to use in making their investment and policy decisions.

The NRC identified two other drivers during the review:

- stakeholders requiring information so they can use it to hold the relevant authorities accountable for the resources they manage
- strong public and political support.

The second of these was evident in the establishment of the Healthy Waterways EHMP over a relatively short period. In this case support for action and continued monitoring was driven by an iconic environmental site having reached a visible 'crisis point' which generated increased concern about the declining health of south-east Queensland's waterways.

2.2 Generating useful information

Investors and decision-makers will rely on the outputs of an MER system if they find them useful and will therefore support the system's existence over a long period. This is especially true if the managers of the MER system review and adapt the system so the information it generates remains relevant.

For example, the public, government and private organisations have relied on the information produced by the BOM for more than 100 years. The BOM offers a wide range of meteorological products it tailors to each user's requirements. In continuing to adapt the reports it produces, the BOM incorporates scientific research findings and users' changing requirements.

The Healthy Waterways partnership produces 'report cards' in order to convert scientific data to easily comprehensible reports that managers, stakeholders and the public can use. The Healthy Waterways EHMP invests in scientific research to both inform changes in the data collected and increase the usefulness of the information reports generated.

2.3 Adopting a standardised approach

When a standardised approach to monitoring, evaluation and reporting is adopted, the information generated is more useful because there is greater clarity about how to use and interpret the information. It also creates greater scope for generating consistent and comparable information from a range of sources. A standardised approach includes:

- reaching agreement about the indices to be monitored in order to obtain a clear picture of the trend of a specific item
- adopting a consistent approach to collecting, analysing and reporting the data in order to assure quality
- tailoring an information product to the users' decision-making needs
- using shared terminology so all the parties involved in collecting, using and reporting information have the same understanding. For example, there is an agreed definition for 'depreciation' or 'native vegetation'.

The design of the MER system and standardisation of the approaches should be informed by the users' information requirements and by scientific research.

2.4 Establishing a good governance structure

A good governance structure will promote investors and users' confidence in the system by providing transparency and accountability. The governance structure should promote strategic planning including:

- prioritisation of investment in initial design and technology and in changes to these over time
- ensuring the system is properly informed by science and meets users' requirements.

The governance structure can include a board or another body that oversees the MER system and reviews the annual MER activities and budgets. It can also include independent technical advisory groups or a scientific research arm that provide advice about the design of the MER system and how to adapt the design over time. It should include a review and reporting mechanism so the MER system's usefulness can be evaluated and improved over time.

Auditing by an independent third party may be used to promote reliability of the information generated from the system.

In addition, a coordinating body can have an important role in drawing together the investors' needs and the technical requirements that underpin the design of an effective MER system. A coordinating body can also drive the process of both securing ongoing funding and managing investment in technology and modelling tools. However, a coordinating body is unlikely to be effective in the absence of strong leadership and support for the MER system's information outputs.

2.5 Ensuring adequate funding for the system

Adequate funding over time is essential to develop and maintain the system including the science or other expertise as well as the collection methods, the report formats and the technology that are part of an MER system.

For example, the Healthy Waterways EHMP was able to be established because it attracted initial NHT funds, of between \$2 million and \$3 million.⁵ The BOM has annual funding in excess of \$200 million for supporting the management and continued development of the BOM's MER system.⁶ The Australian Securities and Investments Commission (ASIC) receives comparable government funding and additional generated revenue (although ASIC has other responsibilities).⁷

However, it can take a great deal of effort to maintain adequate levels of funding. To help attract funding, the system's managers may prepare strategies, business plans, communication programs and annual reports.

⁵ Personal Communication, Diane Tarte, Director of Healthy Waterways Secretariat, 22 March 2007

⁶ BOM *Annual Report 2005-06*, p38. The BOM notes it is facing funding pressure because many of its assets are reaching the end of their useful life, BOM *Annual Report 2005-06*, p1.

⁷ ASIC *Annual Report 2006*, p 57

3 Characteristics of three MER models

The NRC analysed the three institutional models and grouped their characteristics under the following main headings:

- the drivers for MER
- the organisational structures and institutions for supporting MER
- other features that are important in making the model work.

The following sections present this analysis which was the basis for identifying the attributes of effective MER systems described in chapter 2.

3.1 Corporate financial reporting

The corporate financial reporting system enables the collection and reporting of companies' financial information. Investors and decision-makers use this information to inform investment decisions and hold company managers to account for use of resources that affect a company's performance. The system has been built up over many years of practice and evolution.

The characteristics of this model that make it effective include:

- strong demand by investors for provision of good, reliable information, and financial drivers for the information to be generated
- a governance structure that includes:
 - an independent body that sets standards for ensuring that the data that companies must collect and submit is reliable
 - one national oversight body that has legislative force, collects information from all companies and makes the information accessible to users
 - third-party audits for promoting the information's reliability
- standardised report formats for enabling investors to understand and compare information.

Table 1 contains more detail about these and other characteristics of the model.

Table 1: Characteristics of the model for corporate financial reporting

Factor	Observation
Drivers	<ul style="list-style-type: none"> ▪ Investors require transparent, comprehensible and comparable data on which to base their decisions and hold the company's managers accountable. ▪ Company boards and managers require the information in order to manage the company and also ensure it meets the relevant legislative requirements. ▪ A legislative framework exists so accountability is promoted and reporting requirements are formalised.⁸ Under the framework, companies must submit reports to ASIC, companies and directors have legal duties imposed on them, and companies and directors incur penalties if they fail to comply with the relevant legislation. ▪ The model has strong political support because reporting about corporate financial information is a key component of functioning companies and the economy.
Organisational framework	<ul style="list-style-type: none"> ▪ For data collection and reporting, there is one national oversight body: the Australian Securities and Investments Commission (ASIC). ASIC is a statutory body that has legislative force. It provides centralised collection of data, oversees the reporting system, provides accountability and ensures adherence to legislation. ▪ For setting technical accounting standards, there is one national body: the Australian Accounting Standards Board (AASB). ▪ Company boards and managers collect and report about the data that is provided to ASIC.
Other features	<ul style="list-style-type: none"> ▪ A common standardised approach, and key indices for collecting data and measuring performance, have been developed, and uniform reporting methods apply. ▪ Audits are required, so both reliability of information and accountability are promoted. ▪ Financial reporting systems such as IT-based systems are developed to facilitate data collection and creation of useful reports. ▪ ASIC has large amounts of annual funding – approximately \$200 million from government, plus other revenues of about \$300 million – to spend on a number of programs, including company reporting.⁹ AASB has an annual budget of approximately \$4 million, and receives between \$2 million and \$3 million from the Federal Government.¹⁰

Note: The information sources for Table 1 are set out in the attachment to this report.

⁸ For instance requirements under the *Corporations Law 2001* and the *Australian Securities and Investments Commission Act 2001*.

⁹ Australian Securities and Investments Commission, *Annual Report 2006*, p.57

¹⁰ Financial Reporting Council, Australian Accounting Standards Board, Auditing and Assurance Standards Board, *Annual Report 2005-2006*, p.72

3.2 Meteorological reporting in Australia

Meteorological reporting involves collecting meteorological observations and interpreting them for many productive and social uses.

The characteristics of this model that make it effective include:

- strong demand by users for meteorological data and reports
- a nationally consistent approach to collecting, analysing and reporting data
- information and methods of reporting that have been adapted to meet various users' requirements over time
- one national body established by legislation that has clear responsibility and primarily determines the strategy for and undertakes the collection, management and reporting of the data.

Table 2 provides more detail about these and other characteristics of the model.

Table 2: Characteristics of the model for meteorological reporting

Factor	Observation
Drivers	<ul style="list-style-type: none"> ▪ In Australia, there was early political and public perception that meteorological observations were important, and their importance was recognised in the Constitution. ▪ There is demand for information in relation to navigational and shipping requirements, defence and planning of wartime operations, aviation requirements, public weather reports, agricultural activities, risk minimisation, and protection of life and property. ▪ Under federal legislation, BOM is empowered to establish offices, make arrangements to collect data, create reports based on the data, and undertake relevant research.
Organisational framework	<ul style="list-style-type: none"> ▪ One national organisation, the BOM, was established under federal legislation and since 1908 has been responsible for collecting, reporting about and managing meteorological data.¹¹ ▪ The BOM has offices in each state and territory, and approximately 1300 staff members. It coordinates and collects data from its own 57 'manned' meteorological offices as well as from 800 automatic - or 'under contract' - observations sites, 6000 volunteer rainfall-observing stations and 100 volunteer ships from which marine-weather observations are made.¹² ▪ The BOM has specialised in-house expertise for collecting, managing and analysing the data.
Other features	<ul style="list-style-type: none"> ▪ A national common approach was established early in the development of this model. ▪ International standards and guidelines of the World Meteorological Organisation have been incorporated in a common approach so data can be used both domestically and internationally. ▪ Scientific research and data collection and archiving are ongoing. Both improved and new data products result from the research. ▪ Over time, the BOM has changed its information products and the way it makes them available, in order to meet the needs of user groups in areas such as aviation, agriculture and defence. ▪ As a result of technological advances, for example the advent of radar, telecommunications and the Internet, the methods for collecting and reporting about data have become more sophisticated. ▪ Because the BOM receives a large amount of funding each year, it is able to invest extensively in infrastructure, technology and information systems and therefore facilitate its data collection, management and reporting. However, budget pressures have been identified as a threat to the institution's ongoing monitoring, evaluation and reporting. ▪ The BOM has a clearly documented strategy, and produces business plans and annual reports. ▪ Available data includes both indicators of the existing state of the environment and prediction of future states.

Note: The information sources for Table 2 are set out in the attachment to this report.

¹¹ BOM operates under authority of *Meteorology Act 1955*. BOM is established as an Executive Agency under the *Public Service Act 1999*, refer Bureau of Meteorology, *Annual Report 2005-06*, p.4.

¹² Bureau of Meteorology, *Annual Report 2005-06*, p.21, p.198

3.3 The Healthy Waterways Ecosystem Health Monitoring Program

In the Healthy Waterways EHMP, data is collected in order to measure changes in ecological health and obtain long-term feedback about the effectiveness of management actions taken to protect marine, estuarine and freshwater areas throughout the south-east Queensland (SEQ) region. Data collection and reporting are coordinated and provided for both the public and the partners to the South East Queensland Regional Water Quality Management Strategy (SEQRWQMS). The SEQ Healthy Waterways partners have been implementing the SEQRWQMS since 2001, and the EHMP has been fully operational since 2003.¹³ The partners¹⁴ include state government agencies; 18 local government bodies; catchment authorities; statutory bodies; and industry, research, indigenous and community groups.¹⁵

The characteristics of this model that make it effective include:

- initial strong drivers for its creation, including a 'visible' crisis point and support by people who have authority
- receipt of start-up funds
- an agreed standard approach to the data to be collected and a focus on producing reports in which scientific data are converted to a useful format
- agreement by the partners to a strategy that supports the model
- coordination by one body on behalf of all the partners
- use of an independent scientific advisory group.

Table 3 contains more detail about these and other characteristics of the model.

¹³ Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *Institutional Arrangements, DRAFT "The New Blue Book"*, p.3

¹⁴ The partnership is also known as the "Moreton Bay Waterways and Catchment Partnership".

¹⁵ http://www.healthywaterways.org/who_is_hww_partners.html

Table 3: Characteristics of the Ecosystem Health Monitoring Program model

Factor	Observation
Drivers	<ul style="list-style-type: none"> ▪ The SEQ Healthy Waterways Partnership and the EHMP were driven by convergence of a number of factors, including: <ul style="list-style-type: none"> - the poor state of health of the rivers and Moreton Bay – a visible ‘crisis point’ - the large amount of media coverage and community concern - strong political support - that the initial programs that led to the strategy were supported by decision-makers who had authority, such as mayors and heads of department, and credible individuals, such as the Senior Deputy Vice Chancellor of the University of Queensland. ▪ The EHMP’s longevity may depend on the ongoing public and political perception that healthy waterways are important and of the associated benefits, such as increased tourism and improved quality of life. ▪ The EHMP’s continued usefulness for informing the partners’ strategies and decisions may also drive its ongoing support.
Organisational framework	<ul style="list-style-type: none"> ▪ Healthy Waterways is managed by a partnership,¹⁶ and the partners have established a Secretariat to manage the EHMP, among other programs. At present, the Secretariat has no specific legislative mandate, but its existence is supported by the partners’ ongoing commitment to the SEQRWQMS and commitment of funds. ▪ The Secretariat: <ul style="list-style-type: none"> - reports to a Policy Board and Policy Council the partners have established - has access to expert scientific advisory groups and ensures that the EHMP is informed by relevant science - ensures maintenance of a coordinated and integrated approach to the EHMP, acts as a broker, and fosters agreements between the partners - subcontracts various parts of the EHMP, such as data collection, to agencies and universities, and has an agreement with the CSIRO about design, statistical analysis, development of indices and reporting mechanisms for the MER framework - provides centralised data collection, storage and reporting, and provides a resource centre for users. ▪ A separate scientific research arm of Healthy Waterways continues to develop the science, which in turn can inform the EHMP.

¹⁶ The Moreton Bay Waterways and Catchments Partnership

Factor	Observation
Other features	<ul style="list-style-type: none">▪ There is a standardised approach to collecting and disseminating the data. The approach of generating an 'annual ecosystem health report card' ensures that the data is in a useable form.¹⁷ Monitoring is linked to the EHMP's management objectives. Quality is assured by continually reviewing the EHMP, including its science, the methodologies applied, site selection and by stakeholder involvement.¹⁸▪ The EHMP was established through use of initial funding from NHT.▪ The EHMP has one budget that is contributed to by the partners.▪ The Secretariat expends a great deal of effort in securing from the partners a commitment to fund the EHMP on an annual or three-year basis.▪ The Secretariat manages a stakeholder involvement program and a communications program to promote effective engagement with stakeholders and ongoing support for the EHMP.▪ Healthy Waterways has a clear vision and clear objectives, and produces business plans and annual reports.

Note: The information sources for Table 3 are set out in the attachment to this report.

¹⁷ For example of report cards see Moreton Bay Waterways and Catchment Partnership, *Report Card 2006 for the waterways and catchments of South East Queensland*. Available at <http://www.ehmp.org/> and also Healthy Waterways Ecosystem Health Monitoring Program *Annual Technical Report 2005-06 on the health of the freshwater, estuarine and marine waterways of South East Queensland*.

¹⁸ Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *Institutional Arrangements, DRAFT "The New Blue Book"*, p.31

Bibliography

Company reporting

Australian Accounting Standards Board, *Business Plan Initiatives 2006–07*. Available at http://www.aasb.com.au/workprog/aasb_index.htm.

Australian Accounting Standards Board, *Business Plan 2006–07*. Available at http://www.aasb.com.au/workprog/aasb_index.htm.

Australian Accounting Standards Setting Board, *Background to the AASB*. Available at <http://www.aasb.com.au/about/structure.htm>.

Australian Securities and Investments Commission, *Financial Reporting*. Available at <http://www.asic.gov.au/asic/asic.nsf/byheadline/Finaicial+reporting?openDocument>.

Australian Securities and Investments Commission, *Strategic Plan 2005–2010*. Available at [http://www.asic.gov.au/asic/pdflib.nsf/LookupByFileName/ASIC_strategic_plan_2005-10.pdf/\\$file/ASIC_strategic_plan_2005-10.pdf](http://www.asic.gov.au/asic/pdflib.nsf/LookupByFileName/ASIC_strategic_plan_2005-10.pdf/$file/ASIC_strategic_plan_2005-10.pdf).

Australian Securities and Investments Commission, *Annual Report 2006*. Available at http://www.asic.gov.au/asic/asic.nsf/byheadline/ASIC+at+a+glance?openDocument#strategic_plan.

Damant, D. (2003) Accounting standards – a new era, *Balance Sheet*, Vol . 11, No. 1, 9–20

DiPiazza, S. A., Speech given on 17 June 2002, *Building Public Trust: The Future of Corporate Reporting*, National Press Club. Available at <http://www.xbrl-nederland.nl/upload/21/pub/20020617%20Building%20public%20trust.pdf>.

Financial Reporting Council, Australian Accounting Standards Board, Auditing and Assurance Standards Board, *Annual Report 2005–06*. Available at http://www.aasb.com.au/about/structure_index.htm.

Gaffikin, M. (2006), Regulation: Standardising Accounting Practice, *Working Paper Series 06/22*, University of Wollongong School of Accounting and Finance. Available at <http://www.uow.edu.au/commerce/accy/>.

Mezias, S. J. (1990), An Institutional Model of Organisational Practice: Financial Reporting at the Fortune 200, *Administrative Science Quarterly*, Vol. 35, No. 3, pp 431–57.

Pearce, C., MP, Parliamentary Secretary to the Treasurer, 22 November 2004, *Address to the 21st National Conference of Chartered Secretaries Australia – The Future of Governance Regulation in Australia*. Available at <http://parlsec.treasurer.gov.au/cjp/content/speeches/2004/001.asp>.

<http://www.asic.gov.au>.

<http://www.aasb.com.au>.

Meteorological reporting in Australia

Australian Government Bureau of Meteorology, *A Brief History of the Bureau of Meteorology*. Available at <http://www.bom.gov.au/inside/eiab/Bureauhistory.shtml>.

Australian Government Bureau of Meteorology, *Catalogue of Products and Services*. Available at <http://www.bom.gov.au/catalogue/>.

Australian Government Bureau of Meteorology, *Online Action Plan*. Available at <http://www.bom.gov.au/inside/ccsb/ogo/oap.shtml>.

Australian Science and Technology Heritage Centre and Bureau of Meteorology (2001) *Federation and Meteorology*, Australian Science and Technology Centre. Available at <http://www.austehc.unimelb.edu.au/fam/about.html>.

Bureau of Meteorology (2001) *A Hundred Years of Science and Service: Australian meteorology through the twentieth century*.

Bureau of Meteorology, *Annual Report 2005–06*.

Bureau of Meteorology, *Strategic Plan 2005–2010*.

The Meteorology Act 1955 (Cth).

<http://www.bom.gov/au>.

The Healthy Waterways EHMP

Dennison, W. C. and Abal, E. G. (1999) *Moreton Bay Study: A Scientific Basis for the Healthy Waterways Campaign*, South East Queensland Regional Water Quality Management Strategy, Brisbane.

Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *Institutional Arrangements, DRAFT 'The New Blue Book'*, September 2003.

Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *2003–2004 Business Plan*.

Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *2004–2007: Three Year Business Plan*.

Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *Annual Report 2005–06*.

Healthy Waterways Ecosystem Health Monitoring Program, *Annual Technical Report 2005–06, on the health of the freshwater, estuarine and marine waterways of South East Queensland*.

Healthy Waterways, Moreton Bay Waterways and Catchments Partnership, *South East Queensland Regional Water Quality Management Strategy: A Summary Guide*. Available at http://www.healthywaterways.org/pub_the_strategy_document.html.

Moreton Bay Waterways and Catchment Partnership, *Report Card 2006 for the waterways and catchments of South East Queensland*. Available at <http://www.ehmp.org/>

Land and Water Australia (2002) *Healthy Waterways Project Model: A study to identify, and examine the transferability of, and critical success factors of the 'Healthy Waterways' project model – South East Queensland, Australia*, Final Report.

Pantus, F. J. and Dennison, W. C. (2005), Quantifying and Evaluation of Ecosystem Health: A Case Study from Moreton Bay, Australia, in *Environmental Management*, Vol. 36, No. 5, pp 757–71.

Personal Communication, telephone conversation between the NRC and the Healthy Waterways Secretariat Director, Diane Tarte, 22 March 2007.

<http://www.healthywaterways.org.>

<http://www.ehmp.org.>