

# Case Studies of Current Regional/Catchment Integrated Assessments



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# Abbreviations

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ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ARC	Auckland Regional Council
ASIC	Australian Securities and Investment Council
BBG	Blackwood Basin Group
BRS	Bureau of Resource Sciences
CMA	Catchment Management Authority
DEH	Department of Environment and Heritage
DIPNR	Department of Planning Infrastructure and Natural Resources
DNRM	Department of Natural Resources and Mines
DPSR	Driver, Pressure, State Response model for SoE
EHMP	Ecosystem Health Monitoring Program
EPA	Environmental Protection Authority
FBA	Fitzroy Basin Association
FBC	Fraser Basin Council
GINRF	Gippsland Integrated Natural Resource Forum
GWQMP	Gippsland Water Quality Monitoring Partnership
HCCREMS	Hunter and Central Coast Regional Environmental Management Strategy
HROC	Hunter Region of Councils
HC	Hunter Councils
INRM	Integrated Natural Resource Management
INRMB	Integrated Natural Resource Management Board
MAT	Management Action Target
MBWCP	Moreton Bay Waterways and Catchment Partnership
MER	Monitoring, Evaluation and Reporting
MEWG	Monitoring and Evaluation Working Group
NAP	National Action Plan
NHT	Natural Heritage Trust
NLWRA	National Land and Water Resources Audit
NM&EF	National Monitoring Environmental Framework
NRM	Natural Resource Management
PSR	Pressure, State, Response (model)
RCIP	Regional Catchment Investment Plan
RCS	Regional Catchment Strategy
RCT	Resource condition Target
RMA	Regional Monitoring Authority
SA MDB NRMB	South Australian Murray Darling Basin Natural Resources Management Board
SEQ	South East Queensland
SoE	State of the Environment
SOR	State of Region
SORR	State of Region Reporting
SORR	State of the Region reports
VCMC	Victorian Catchment Management Council

## Executive Summary

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This report provides detailed evaluation and analysis of each of the eight case studies profiled for the National Land and Water Resources Audit (NLWRA) as part of *Case Studies of Current Regional/Catchment Integrated Assessments*.

The report expands upon detailed evaluation criteria which focus on a number of different characteristics relating to MER in each of the case study regions. The analysis placed particular emphasis on the key factors that have enabled NRM organisations to successfully report on the biophysical, social and economic status of the region.

Findings from this study are diverse; however the following outlines the most important conclusions that have been drawn from the analysis.

1. There is considerable confusion regarding roles and responsibilities for the different aspects of MER and for the data management, interpretation and selection of appropriate indicators.
2. The drivers and aims for reporting vary greatly between the regions profiled therefore the style and type of reporting on the biophysical, social or economic status of the region varies greatly.
3. There is a fundamental difference between reporting approaches of individual NRM organisations such as CMAs which have a defined role in coordinating and delivering responses (the regional NRM strategy) and the reporting of wider coalitions where there is an attempt to report on the collective progress of the region in achieving sustainable development through integrated NRM.
4. All formal NRM regions that have developed Regional Catchment Strategies have targets for resource condition (RCTs) and management action targets (MATs). Within Australia there is a lot of reporting on outputs and activities however NRM organisations rarely report well on the outcomes of activities and real progress towards the RCTs.
5. Some regional reporting has significant direct influence on the planning, policy and investment decisions of other agencies whose decisions impact on the natural environment. Those organisations that have direct influence tend to have good processes and tools in place to engage the community and/or have developed scientifically credible approaches and systems for reporting.
6. Some NRM organisations have tailored their reporting purely towards reporting on progress against the RCTs in their plan, and use information generated to prioritise projects, and to attract and direct NRM investment.
7. The simple score cards seem to be the most powerful types of tools to report to the community using simple language, visual icons, maps and easily understood rating systems.

8. All case studies acknowledge the importance of trend assessment but varied in their access to long term information. Resource Condition Targets need to be re-examined for appropriateness, indicators need to be more clearly defined and data must be available and accessible to enable technically rigorous trend assessment
9. Some of the case studies demonstrate the value and importance of linking environmental research and environmental monitoring. Scientific expert panels which track the findings of the monitoring program are integral to expanding R&D.
10. Most of the regions have developed indicators based on priorities in the region and are not necessarily aligned with the National Monitoring and Evaluation Framework.
11. Most Australian regional organisations focus primarily on biophysical factors in NRM and only occasionally bring forth socio economic information where it relates to NRM. This may be due to the fact that NRM bodies have a relatively narrowly defined “charter” re socio economic issues.

In light of the above findings sixteen recommendations have been made, including:

## **Roles and Responsibilities**

### *Recommendation 1*

The responsibility for the clarification of roles and responsibilities cannot be left to individual regional organisations to work through and needs to be addressed by coordination processes undertaken at the State level and/or national scales). At a minimum these processes should address the following issues:

- promote understanding of interrelationships between natural resource management issues, pressures and condition;
- clarify roles, responsibilities and purpose between stakeholders;
- develop regionally focused and collectively agreed indicators for reporting on natural resource condition;
- align State monitoring to regional planning and reporting needs where possible and develop regional monitoring partnerships;
- develop agreed standards and approaches for data and information management in order to meet both state and regional needs;
- carry out interpreted and integrated assessments to transform data into useful information; and
- establish reporting systems to communicate to the broader community the value of investments.

## **Drivers for Reporting and Minimum Standards**

### *Recommendation 2*

The development of minimum reporting standards for NRM groups should be explored. These standards could build on the rationale and guidelines articulated by the Global Reporting Initiative. The standards could define the roles and expectations of an annual report to ensure effective adoption of approaches such as the DPSR model used in SoE reporting. At a minimum the reports should document progress in NRM strategy development and implementation, emerging issues, future directions and where possible provide evidence based on systematic measurement of changes in environmental conditions.

## **Organisational or Regional Focus**

### *Recommendation 3*

More coordinated approaches to periodic State of the Region Reporting (SORR) are required as a way of providing critical advice for policy development and the revision of regional NRM strategies. If comprehensive State of the Region Reports were to collate and synthesise relevant information on pressures, condition and responses for each region periodically (say every five years), annual reports developed by each NRM organisation (for example, each CMA) could focus on providing updates in terms of the effectiveness of the NRM responses in addressing priority issues.

## **Structuring and Scheduling Monitoring and Reporting Efforts**

### *Recommendation 4*

That each state should consider trialling a structured approach to SORR which is based on detailed and comprehensive assessments of conditions, pressures and evaluation of responses. Such assessment would support regional bodies' identification of priorities and provide a periodic assessment of the overall effectiveness and appropriateness of current policies and strategies.

## **Reporting Against RCTs**

### *Recommendation 5*

The NRM Ministerial Council should consider standardising reporting approaches for NAP and NHT regions in the form of a reporting template. The template would need to be sufficiently generic to accommodate the range of regions and diversity of NRM issues. The template could build upon the template being developed in Victoria to enhance Victorian CMA MER.

## **Organisational Models: Consensus, Influential or Statutory Power**

### *Recommendation 6*

Efforts to improve the effectiveness of integrated regional NRM reporting should focus on ensuring scientific credibility and stakeholder engagement.

## **NRM Bodies that Influence NRM Funds**

### *Recommendation 7*

Regional NRM organisations should investigate how they can develop a more systematic approach to regional reporting that enables them to report on condition, pressures and progress towards targets (RCTs) by utilising information already used to prioritise issues, acquit government expenditure, and report on outcomes of NRM efforts.

## **Score Cards**

### *Recommendation 8*

Given that governments are investing in regional NRM strategies that depend on influence, ways of maximising this influence by regular reporting to community and influential stakeholders should be supported through the use of tools such as scorecards and snapshot reports.

### *Recommendation 9*

Regional NRM bodies should investigate the production of scorecards where they are confident that they can be supported by a credible basis for reporting which has at least been subjected to scientific peer review. Regions that are data poor should develop scorecards to start the reporting process by using existing information and build and develop the tool on an annual basis.

### *Recommendation 10*

The successes of scorecards depend on good science and scientific credibility. In the case studies this was enhanced by the support of independent chairs and/or scientific advisory panels.

## **Longitudinal Studies and Trend Assessment**

### *Recommendation 11*

In order to overcome the confusion regarding roles and responsibilities for environmental monitoring, processes are required to define roles and responsibilities and determine what data and monitoring programs currently exist and ways in which these can be used to develop rigorous monitoring frameworks including how to incorporate data from past monitoring programs.

### *Recommendation 12*

Regional organisations need to define relevant indicators for their priority issues; to undertake a data audit to determine what data is available to support assessment; and develop strategies for ongoing collection and reporting on available data. Where there are critical deficiencies identified, cooperative research strategies may be required to ensure scientifically rigorous monitoring and reporting.

## **Refining Monitoring Systems and Focusing R&D**

### *Recommendation 13*

Regional NRM groups and or relevant state agencies establish R&D partnerships tasked with the roles of designing and refining effective monitoring systems and overcoming critical R&D gaps

## **Alignment with the National MER Framework**

### *Recommendation 14*

There is a need for better processes to support the selection of relevant indicators and related datasets which relate to strategic objectives at the regional and national scales. This process needs to be undertaken at a scale greater than individual CMAs, for example by a state agency or catchment council and coordinated nationally at a strategic level only.

## **Integration of Socio-economic Information**

### *Recommendation 15*

Agencies such as the ABS, ABARE and BRS should consider trialling the provision of relevant socio economic data, based on existing data sets for use by NRM regions in ways which align with their boundaries and priority needs.

## **Use of MER for Adaptive Management**

### *Recommendation 16*

R&D and NRM organisations actively explore opportunities for joint projects with the objective of further developing understanding and capacity for active adaptive management.

**Table 1. Summary of findings of Regions profiled**

Organisation	Type and Aim of Reporting	Supports Decision Making	Linked to Investment Decisions	Community Engagement	Trend Assessments	Refining R&D and monitoring systems	Alignment to National Framework	Data Sets Used	Integrated with socio-economic information
<b>Victoria</b> Gippsland Integrated Natural Resource Forum (GINRF)	A scorecard used as a communication tool and reporting tool.	Used for annual planning and business planning by GINRF members.	Drawn on for development of the RCIPs.	Effective and simple tool for community engagement.	The scorecard is not currently used for trend assessment but will be in the future as the tool is increasingly refined.	The scorecard has created greater awareness of the environmental condition. Refinement of systems is taking place as a result.	The GINRF referred to the National MER Framework during the development of the scorecard. The scorecard has been aligned where possible.	State of the Gippsland Lakes produced by the Gippsland taskforce. Various management plans and strategies. GINRF would like to see the tool supported by more rigorous data.	The scorecard focuses on biophysical themes. Some of the asset descriptions, condition summaries and stewardship summaries incorporate socio-economic information.
<b>Queensland</b> Moreton Bay Waterways and Catchment Partnership (MBWCP)	Report cards and technical reports used as a decision support tool, community education and engagement.	Reporting has supported planning and policy development at a range of levels. EPA and industry use the reporting to negotiate pollution loads, water resource planning and growth management planning.	Reports have helped develop NRM regional investment strategies and define assets of high ecological value in planning.	Scorecards have been effective in engaging the community. They provide a means for the public to easily assimilate ecological information.	Significant investment in scientific monitoring has supported annual catchment, river and estuary scorecards to demonstrate overall trends. Sufficient data now exists to further analyse monitoring data to ascertain trends in relation to natural perturbation.	R&D has been expanded through the advice from the scientific expert panel in tracking the monitoring program.	This is unclear however the partnership hopes that commonality should exist.	Detailed water quality monitoring data.	Social and economic indicators area not monitored. Reporting is biophysical focusing on freshwater and marine environment. Proposed human health risk assessment.
<b>NSW</b> Hunter Councils (HC)	Hunter and Central Coast Regional Environment Management Strategy that aims to integrate government planning and environmental management at the regional level (HCCREMS). Assists councils with SoE Reporting. Research, regional data collation and technical reports used as a support tool, community education and to build institutional capacity.	The HCCREMS aims to influence Council decisions and planning tools such as policy concerning key regional environmental outcomes. Findings from the HCCREMS are incorporated in Council Code of Practices and Planning instruments, SoE reporting and regional planning and NRM strategies.	Data and information from the HCCREMS has been used by the Hunter Central Rivers CMA to assist with guiding the formation of the Catchment Action Plan and investment priorities. It has also been used extensively by State government in conservation plans and regional planning strategies.	The HCCREMS aims to focus on councils but support is provided to community groups via advice and data/information.	It is intended for the HCCREMS to be used for longitudinal studies. A program is currently in place to establish partners in longitudinal studies through the Environmental Institute.	The HCCREMS has proven very useful for focusing and applying research and development on specific regional NRM issues. HCCREMS has initiated a wide range of research projects to address key challenges facing local government in achieving ESD and resolving issues related to ecosystem management and urban design.	The HCCREMS aims to be innovative in approach including the collection and reporting of regionally specific data. There is no deliberate consistency with the National Framework.	Data and information is used from the Department of Environment and Conservation, Department of Infrastructure and the Environment Protection Authority. HCCREMS has been collecting regional data across 14 local government areas for ten years. Holds the region's most comprehensive biodiversity data repository (national, state, regional and local level), and extensive environmental domain and water management data.	The HCCREMS aims to provide a balance to the decision processes and approaches taken by the Hunter Councils' members by providing environmental information as a balance to the socio-economic focus of councils.
<b>Queensland</b> Fitzroy Basin Association (FBA)	Currently focus on output reporting to the Australian Government.  Proposing to trial Qld State of the Region reporting to assess resource sustainability as distinct from reporting on outputs.	Current reporting is of limited value in assessing meeting of targets and resource condition.	Reporting is linked to the Regional Investment Strategy in terms of management actions but does not address strategic outcomes.	Reporting is not seen as relevant for community engagement.	Current reporting is of limited use for resource trend assessment.	Proposed State of the Region Reporting is seen as being useful in directing future R&D relevant to assessing resource condition in the region.	The National Monitoring and Evaluation Framework and the National Standards and Targets Framework are being consolidated into the Queensland Monitoring, Evaluation and Reporting and Review Framework to provide guidance.	Available access to State Government data sets, e.g. water quality, sediment and vegetation data has been very important.	There is a problem of socio-economic information being available at a catchment scale. Some economic profiling of properties across the region has taken place to ascertain where greater investment returns for resource sustainability might be generated.

**Table 1 (cont'd). Summary of findings of Regions profiled**

Organisation	Type and Aim of Reporting	Supports Decision Making	Linked to Investment Decisions	Community Engagement	Trend Assessments	Refining R&D and monitoring systems	Alignment to National Framework	Data Sets Used	Integrated with socio-economic information
<b>Western Australia</b> Blackwood Basin Group (BBG)	Most reporting concluded due to NRM regional reforms. Annual reports about to be reinstated after period of abeyance since reforms.	MER has supported detailed sub catchment planning and implementation in the past including NRM and biodiversity priority setting and this will continue to support NRM decisions but is no longer active in the monitoring of the environment. Project based monitoring is occurring.	Previously formed the basis of investment decisions and will help inform NRM investments via SWWA NRM allocations.	MER in the BBG has been very influential in community engagement. Future MER in the region is less certain.	Monitoring in the region has been reduced so the use of the data and information for longitudinal studies and trend assessment is uncertain.	The BBG group illustrates an innovative example of community involvement in NRM and MER activities. The group undertook some very important pioneering work but their incorporation into a bigger scale NRM region seems to have disrupted ongoing monitoring.	There is no ongoing work in MER to be aligned.		The BBG used socio-economic surveys to gain a better understanding of local land holders interests, capacity and NRM issues. This guided the zone action plans and the NRM programs.
<b>South Australia</b> South Australian Murray Darling Basin Natural Resources Management Board (SA MDB NRMB)	A catchment condition report based on 24 report cards to be developed by the end of 2005. This will replace the current Performance Assessment and Reporting System. The aim of the report cards was to report on resource condition that related to the Resource Condition Targets (RCTs). The report provides information towards statutory and non-statutory reporting requirements.	The resource condition report will show progress towards the INRM Group Plan developed in 2004.	The resource condition report will act as a common tool to assist with prioritisation of projects.	A number of types of reports may be developed based on the report cards. A simple report card may be developed for the community. More detailed technical reports may also be developed. The SA MDB NRMB has not finalised report formats yet.	Each of the 24 report cards illustrates the long term trend (no available trend, downward trend, stable, positive trend or exceeded).	The work done so far has not been used for refining monitoring systems and focusing R&D. It is unclear at this stage whether the report will inform R&D in the region.	The reporting is well aligned to the National Monitoring and Evaluation Framework.	The 24 report cards are supported by very detailed data and information covering native vegetation, wetlands, biodiversity, groundwater and surface water flows, water quality and agriculture.	The 24 report cards focus on threatened species, pests, native vegetation and revegetation, water.
<b>New Zealand</b> Auckland Regional Council (ARC)	To meet requirements for environmental effectiveness and monitoring under the RMA.	Actively supports informed decisions to the level of detailed local planning and legal challenges to it.	Strongly linked to public and private investment decisions, inland water use and rehabilitation. Guides programs, R&D and priority setting.	Influential in engaging community through integration with development planning and via state of the region reporting, regional and local plan development.	Credible, scientifically robust trend assessment is the purpose of the monitoring programs. Systems revised to ensure trend interpretation.	Used to review monitoring system designed to ensure the most effective methods are adopted. Direct commissioning of R&D to deliver information to support NRM.	Aligns with the NZ RMA framework to ensure functional links to national and local policies and plans.	Data sets are selected depending on priority issues	The state of the regions report actively incorporates Socio-economic information.
<b>Canada</b> Fraser Basin Council (FBC)	To educate and stimulate community and stakeholders.	Indirectly influences many decisions by many agencies, based on consensus and influence rather than regulatory controls. Helps inform via education and research.	Indirectly links to public and private sector investment.	Directly focusing on community engagement in NRM and sustainability. Active use of the broadsheet through the media and conferences.	The snapshot report brings forward information on many trends relevant to sustainability including environmental and socio-economic issues.	Indirect influence on how information is collected and on R&D.	FBC illustrates a unique attempt at getting consensus around sustainable development which is not replicated in other parts of Canada.	Secondary information on nine socio economic indicators and eight environmental indicators.	More than half the indicators are socio-economic.

# Introduction

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## Reporting on Sustainability

“The 20<sup>th</sup> century saw worldwide progress in harmonising financial reporting. The 21<sup>st</sup> century will require even more rapid progress in the development of globally accepted sustainability methods” (GR1, 2002)

Throughout the world, public companies, NGOs and statutory corporations accept that reporting publicly on activities, achievements and finances is central to accountability, governance and communication, but increasingly there are expectations to report more broadly on environmental and social issues – in short to report on sustainability.

Some public and private organisations are now undertaking sustainability reporting to disclose their performance against a range of sustainability indicators (GRI, 2002). This kind of reporting is becoming more critical to business due to initiatives such as the carbon disclosure project where large institutional investors are requiring disclosure of information on company’s carbon emissions.

In addition to the broadening disclosure responsibilities of individual organisations there are attempts at assessing the performance of whole regions with their multitude of organisations, enterprises and governance processes. A variety of reporting efforts around the world aim to generate overview reports on the sustainability of regions or State of the Region reports (SORR). These use State of the Environment (SoE) methods, developed for national or provincial reporting, at the regional scale.

Organisations with legislative or program responsibilities for specific aspects of sustainable development, like natural resource management, are also generating reports on their activities and achievements. An example of this is Victoria’s CMAs that have statutory responsibility to report annually not only on their NRM programs and financial position but also on the state of their catchments.

Regional reporting approaches vary considerably from broad attempts to report on sustainability, to more targeted attempts to report on the implementation of specific programs.

This report is based on the findings of eight case studies of regional reporting where a wide range of approaches and issues were evaluated. Six of the case studies were Australian. One case study was Canadian – the Fraser Basin in British Columbia – and one was based on the Auckland region in New Zealand.

## Background and Purpose of the Project

In Australia, many organisations are involved in regional NRM reporting and are working through the issues of developing effective, integrated monitoring and reporting systems, such as State of the Region reporting in Queensland.

The need for effective and efficient ways of monitoring and reporting on the condition of the environment and the effectiveness of management efforts has increased with the regionalisation of NRM program delivery.

Early in 2005 the National Land and Water Resources Audit (NLWRA) commissioned a project to evaluate and document *Case Studies of Regional/Catchment Integrated Assessments*. The project addresses a defined national need: the documenting of regional/catchment case studies of integrated reporting as a way to understanding current practice and of documenting this to facilitate the transfer of lessons, the building of capacity and the harnessing of ideas from around Australia.

The project set out to document case studies of current integrated natural resource management reporting at the regional or catchment scale, defining integrated as incorporating socio economic and environmental factors. The focus has been to identify successful approaches which may assist other groups at the regional or catchment scale to undertake integrated catchment assessments and develop associated reports that improve their capacity to make informed investment decisions.

This is the second report from the National Land and Water Resources Audit (NLWRA) *Case Studies of Regional/Catchment Integrated Assessments*. It provides a detailed analysis of the findings and adds value to these findings by way of analysis and recommendations. This report also contains a brief summary of each case study. Detailed case studies have been placed at the back of this report in Appendix A.

Report 1 addressed case study selection methods and the short listing of potential case study regions.

### **Case Study Selection**

The consultants undertook the evaluation of six Australian case studies and two international case studies selected from the short listed fourteen regions as outlined in the Report 1 (Phase 1) submitted by the consultants to the NLWRA in June 2005. Phase 1 involved a systematic selection of case studies. Rationales for selection of the eight case studies for detailed evaluation included the following:

- a history of NRM investment and planning – lessons that could be learnt;
- previously development of detailed area specific plans such as plans relating to pests, conservation, water quality, biodiversity or management of a particular catchment or river;
- availability of data and knowledge in a particular catchment or sub catchment; and
- a suitable test bed for the effectiveness of integrated regional planning and NRM sustainability reporting.

The final eight case studies were developed through reviews of documents, websites and interviews. Published background materials were used to develop the contextual profiles of the regions such as geographic extent, type of NRM organisations and priority NRM issues in the region. A set of evaluation criteria were developed and these were used to

guide interviews and assessments (Appendix B). Table 2 provides a brief outline of the location of the case studies undertaken. Table 3 provides information relating to the aims and charter of each of the case studies profiled.

**Table 2: Case studies undertaken**

Region	Regional Organisation	Description
Gippsland (West East Victoria)	Gippsland Integrated Natural Resource Forum (GINRF)	Included West and East Gippsland CMA regions. It is all of the area south of the Great Dividing Range from Melbourne through to the NSW border.
Morton Bay (South East Queensland)	Moreton Bay Waterways and Catchment Partnership (MBWCP)	The region covers over 22 000km <sup>2</sup> from the Queensland-NSW border to Noosa, and west to the Great Dividing Range and contains 14 river catchments.
Murray Darling Basin (South Australia)	SA Murray Darling Basin NRM Board (SA MDB NRMB)	The region is bounded by the barrier highway to the north, the SA-Victoria and SA-NSW borders to the east, the northern boundaries of the Kingston and Tatiara district councils' areas in the south, and in the west the boundary of the Murray Basin.
Fitzroy Basin (Central Queensland)	Fitzroy Basin Association (FBA)	The Fitzroy Basin is a vast area of central Queensland that includes a diverse array of land types. It surrounds the Tropic of Capricorn in central Queensland and is a significant catchment of the Great Barrier Reef lagoon.
Blackwood Basin (Western Australia)	Blackwood Basin Group (BBG)	The Blackwood Region covers the catchments of the Blackwood, Margaret and Scott Rivers, including the Beaufort, Arthur, Chapman and Buchanan Rivers. It incorporates an area of 28 000 km <sup>2</sup> from Kukerin in the east, to the Hardy Inlet at Augusta
Hunter (NSW)	Hunter Councils (HC)	The Hunter region covers an area of 31,000 km <sup>2</sup> (approximately 3.9% of NSW) and is situated in eastern NSW north of Sydney.
Fraser Basin (B.C. Canada)	Fraser Basin Council (FBC)	The Fraser Basin in Canada stretches 1377 km <sup>2</sup> from the Rockies to Richmond. The Basin covers more than 25% of British Columbia.
Auckland (New Zealand)	Auckland Regional Council (ARC)	The Auckland Region in the North Island of New Zealand is a large area that takes in the Rodney District, North Shore City, Waitakere City, Auckland City, Manukau City, Papakura and Franklin District Councils.

## The Structure of Regional Organisations Profiled

The purpose, intent and history of each organisation vary substantially. Their roles and responsibilities also vary considerably and this variation is reflected in the kinds of reports generated and the methods used to collect and generate information.

The practices and methods adopted to generate reports are fundamentally influenced by the definition of roles and responsibilities. Where there is uncertainty or confusion about roles and responsibilities, these require clarification before focusing on improvement methods or attempts to encourage best practice.

An understanding of the different types of organisations is fundamental to the analysis and comparisons made in this document. It is recommend that the detailed case studies in Appendix A are read to provide the background needed to support the interpretation undertaken in this analysis.

The regional organisations profiled have been grouped into the following categories:

1. **Multi organisation regional partnerships** - some regional organisations are self defined or defined by consensus with partners or consortium members often through an evolving role in regional monitoring and reporting (FBC, MBWCP, GINRF and HC).

2. **The NZ regional councils – the resource management model** - clearly defines by statute the roles and responsibilities for monitoring and reporting as part of an integrated system of planning, NRM and environmental protection established by the New Zealand Resource Management Act.
3. **Australian NRM organisations** – organisations that are now formally recognised and defined by the current NRM arrangements (NAP, NHT) in Australia (FBA, SA MDB NRMB) or in a process of redefinition due to changes in those arrangements (Blackwood Basin Group). These organisations therefore have a role in setting priorities for NRM programs and the allocation of NRM funds.

**Table 3: Organisations profiled**

Regional Organisation	Description / Background	Aims / Charter
Gippsland Integrated Natural Resource Forum (GINRF)	GINRF was formed with seed funding from DSE, DOI and the CMAs. GINRF is a coalition which functions to ensure cooperation of many agencies involved in NRM. It has an executive group of 10 CEOs or senior representatives of the member organisations and is chaired by an independent chair.	The aim of the GINRF is to promote integrated and coordinated NRM across the whole of Gippsland for example to assist in the protection and health of the Gippsland Lakes.
Moreton Bay Waterways and Catchment Partnership (MBWCP)	The Moreton Bay Waterways and Catchments Partnership was formed as a result of the amalgamation of the Brisbane River Management Group (1991-2001) and the SEQ Regional Water Quality Management Strategy project (1995-2001). It is a partnership consisting of all 19 local governments within the Moreton Bay catchment, state agencies (EPA, DNRM, PWS), several universities and the CSIRO with support from community, industry and the Commonwealth Government.	The MBWCP aims to provide a strategic framework for the integrated and sustainable management of the waterways and catchments of the South East Queensland region, including Moreton Bay and adjacent coastal zones.
South Australian Murray Darling Basin Natural Resources Management Board (SA MDB NRMB)	The SA MDB NRMB is an overseeing body that has been established by the SA Government to manage NRM strategies for the SA MDB region. It is one of eight INRM boards established under the SA South Australian NRM Act 2004.	The SA MDB NRMB aims to deliver integrated NRM in the SA MDB region.
Fitzroy Basin Association (FBA)	The FBA is a community-based organisation that promotes sustainable development in Central Queensland. FBA involves the region's major natural resource management stakeholders who have an interest in the use and management of the natural resources of the Fitzroy Basin and the broader Central Queensland region.	The Association's role is to promote sustainable development in the Fitzroy Basin through Integrated Catchment Management (ICM).
Blackwood Basin Group (BBG)	The Blackwood Catchment Coordinating Group was formed to provide leadership, coordination and education to promote sustainable resource management in the Blackwood Basin.	The aim of the Blackwood Basin Group is to, "inspire the sustainable management of Western Australia's Blackwood Basin for current and future generations through coordinating landcare activities and education".
Hunter Councils (HC)	Hunter Councils is an incorporated body comprising 14 Local government areas within the Hunter Region. The board includes Mayors and Councillors from each of the member councils.	Hunter Councils Inc develops and implements the HCCREMS. The Environment Division of HC has ten full time staff and is responsible for designing and implementing regional environmental programs and data. The Division provides advice to the region's councils on environmental and NRM issues of strategic and regional importance. Hunter Councils Inc also assists councils with SoE reporting and facilitates professional teams and forums, delivers capacity building programs and provides input to State government planning and NRM legislation.
Fraser Basin Council (FBC)	The Fraser Basin Council is a non-governmental, not-for-profit, non-partisan organisation. It consists of a collaboration of community groups, NGOs, businesses and four levels of the Canadian government.	The main aim of the FBC is to increase public awareness about sustainability, to identify critical issues, to inform and influence decisions and action with a focus on advancing sustainability.
Auckland Regional Council (ARC)	The ARC is one of 15 regional councils established under the Regional Management Authority.	The principle purpose of the ARC is to integrate planning, NRM and environmental protection for sustainable development.

# Context for Reporting - NRM MER

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The eight regional organisations profiled for this project have different structures, purposes, intent and histories. Some are NRM organisations as defined by the Commonwealth and state NRM arrangements (SA MDB NRMB and FBA,) while others have arisen to meet different needs and developed different structures (GINRF, HC, BBG and SEQ). The two international case studies have fundamentally different roles and origins, in terms of their statutory basis, powers, roles and responsibilities.

Despite this variation, all case studies have in some way adopted a monitoring and reporting model based on SoE concepts that is explicitly or implicitly an acceptance that reporting needs to be based on an assessment of environmental pressures, conditions and responses (see below).

In addition to the use of SoE concepts, Australian regional organisations coordinating NRM programs accept their obligations for monitoring, evaluation and reporting (MER) as defined by the Commonwealth and state Governments. However, most states, in conjunction with the NRM regions are currently engaged in processes to clarify expectations and methods in relation to MER (see below).

## **NRM Targets and Indicators**

All NRM organisations in Australia have developed integrated plans that outline targets for resource condition (RCTs) and management actions (MATs). Yet at the level of specific RCTs and MATs there is considerable effort going into how progress will be measured and reported (see below).

At the national level, the monitoring and evaluation framework was approved by the NRM Ministerial Council in May 2002, and is aimed at assessing progress related to the:

- health of the nation's land, water, vegetation and biological resources; and
- performance of programs, strategies and policies that provide national approaches to the conservation, sustainable use and management of these resources.

The standards and targets framework sets out national outcomes that government funding in natural resource management (through programs such as the NAP and the NHT) should work to achieve. The framework also identifies 'matters for target', designed to help focus efforts to achieve the national outcomes. Indicators for each of the 'matters for target' are currently being developed. As part of the regional planning process, regional NRM plans prepared by the regional bodies set targets for all relevant 'matters for targets' listed in the framework.

The development of a set of Resource Condition Indicators was co-ordinated by the Monitoring and Evaluation Working Group (MEWG). The MEWG was established by the Natural Resource Management Ministerial Council and contains representatives from each jurisdiction but its role has been subsequently transferred to NLWRA. The framework is now commonly referred to as the National Monitoring and Evaluation Framework.

Each NHT or NAP region is expected to report against its management action targets (MATs) and progress towards its Resource Condition targets (RCT). The MEWG targets and indicators are likely to be regarded as a minimum core upon which more regionally specific MER is adopted.

The case studies selected include “formal” NRM regional organisations as well as organisations that are representative of the non NRM regions emerging in parts of Australia. While it is clear from the case studies that all regions are using approaches built on the underpinning concepts established for SoE reporting (see below) many regional organisations predate the current NRM arrangements and have already established MER systems in order to meet the identified needs in their region. For example, the Hunter case study profiles the way a regional organisation of councils (Hunter Councils Inc) has developed regional environmental strategies and supported their members monitoring, reporting and SoE needs within the NSW context which requires local government to deliver annual SoE reports.

In addition, in some regions new and different organisations, other than the recognised NRM organisations, have evolved to undertake aspects of reporting on NRM, for example the emergence of GINRF in Gippsland (GINRF). These organisations may adopt approaches that are at variance with any prescribed national approach and it is unclear whether this would be a problem if the individual agencies (CMAs and state agencies) addressed the requirements imposed by governments.

While in the short term this lack of imposed structures and standards may be a little confusing, in one sense this diversity is fostering a diversity of approaches which may in the long term be conducive to experimentation, innovation and ultimately success.

### **National SoE Reporting**

The National SoE report is prepared every five years with the next due in 2006. It is undertaken independently but supported by the DEH. It is by nature a national overview. Considerable effort has gone into selecting indicators for use for each of the themes since 1996, yet there have been substantial variations in approaches and indicators used for each of the reports. SoE reporting tends to draw on any available information, generated from a range of sources.

National SoE reports tend not to address and be explicitly linked to local or regional scale reporting or address the needs of regional organisations to report on the progress of their NRM initiatives, although there are increasing links between SoE and the processes established by the NLWRA. For example the forthcoming SoE 2006 report chapter on biodiversity has drawn heavily on the NLWRA *Terrestrial Biodiversity Assessment* that accumulated nationwide information at the bioregional and subregional scale.

Most states also undertake some kind of regular SoE report and there are likely to be increasing opportunities for better linking regional and larger scale efforts at monitoring and reporting on the factors affecting the State of the Environment and the effectiveness of NRM and related efforts in managing these.

### **Clarifying State and Regional MER Frameworks**

Since the adoption of endorsed NRM plans in many NRM regions, processes for formalising MER arrangements is a recognised priority for agencies involved in NRM. All states and NRM regions are involved in active processes to clarify roles and responsibilities relating to NRM MER.

These include:

- SORR in Queensland (Ian Gordon, DNRM );
- the framework development in NSW (Helen Watts, DIPNR);
- the development of a template for reporting on RCTs in Victoria (Jason Alexandra, Kate Lumb and Rob Richards working for the 10 CMAs);
- the extension of the Murray INRM approach to other SA regions; and
- the clarification of regional roles and responsibilities in WA.

While the issues being addressed by these processes extend well beyond the scope of this project, the analysis and discussion of the case studies needs to take into account these processes and where they are heading. It is to be noted that the breadth of these separate processes do indicate concern with the current national model at defining locally relevant and rigorous MER that can contribute to achieving resource condition and trend outcomes.

### **Conceptual Models Underpinning MER**

The case studies demonstrate that the core conceptual models used to support regional reporting and MER are a blend of those derived from program evaluation and SoE reporting. In relation to the underpinning conceptual models the following has been noted.

1. Each of the case studies base their MER loosely on adaptive management concepts and on the conceptual frameworks used for SoE (use of the Pressure, State, Response or PSR model) but these conceptual models and techniques and methods to support their use could be further clarified in terms of systematically incorporating them into MER systems and approaches.
2. There is broad acceptance and adoption of proven and complementary conceptual models such as:
  - strategic monitoring of environmental factors;
  - pressure, state, response model or the driver, pressure response state model;
  - the adaptive environmental assessment and management model (adaptive management);

- the various forms of program logic (input, output, outcome); and
  - evaluation models built around efficiency (outputs per unit of input), effectiveness (will the outputs achieve the desired outcomes) and appropriateness (is the response/activity appropriate to achieve the intended outputs and outcomes).
3. There are opportunities to clarify how the various models, methods and approaches are used for MER. Such a clarification would support MER without confusion about the concepts and terms or about the vast array of indicators and processes that can potentially be used in MER.
  4. In the evaluation of NRM effectiveness, attribution of causality is difficult. There is increasing recognition that a combination of scientific understanding and a range of assumptions about the nature of environmental processes underpin the links between NRM activities and regional outcomes. Furthermore as the systems are dynamic, pressures and conditions continue to change due to many factors other than the NRM programs. Many assumptions underpin NRM planning and to ensure that these assumptions are valid, refined and that uncertainty in causal links is reduced, better links to technical review and R&D are required.

# Findings and Implications

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The following analysis of the findings and the interpretation of the implications of these findings are based on the evaluation criteria and questionnaire used for each of the case studies. The sub-headings generally reflect the evaluation criteria used to frame the questionnaires and the documentation of the case studies (See Appendix B)

## **MER Roles and Responsibilities**

### *Introduction*

This section provides an overview of the issues of clarifying roles and responsibilities. Roles and responsibilities amongst the case study organisations vary considerably.

Some of the case study regions are self defined or defined by consensus with partners or consortium members often through an evolving role in regional monitoring reporting (FBC, MBWCP, GINRF and HC). These regions fit the regional partnership model.

Other regions are clearly defined by statute, with roles and responsibilities for monitoring and reporting defined in law (ARC).

Others are defined by NRM arrangements in Australia (FBA, SA MDB NRMB) or are in a process of redefinition due to changes in those arrangements (BBG). These regions fit the NRM organisation model.

### *Findings and Implications*

There is a diversity of approaches to regional MER being adopted by the regions profiled in the case studies. Many have developed capable structures, methods and approaches from which a best practice guide to regional MER could be developed.

However, promotion of best practice per se will not be sufficient to ensure effective MER. The adoption of minimum standards is required for NRM reporting which could be seen to be akin to standards for reporting imposed on public companies by the ASX and ASIC. This is discussed further in the next section.

As stated above the regional reporting approaches, methods and conceptual models tend to be based on the conceptual models used for SoE reporting, and on MER being required by Commonwealth and state NRM agencies.

Little of the MER effort in Australia appears to be firmly institutionalised with relatively new and rapidly evolving organisations adopting their own approaches regionally.

The continuity of reporting efforts is vulnerable to structural changes imposed on regional organisations and on personnel changes and other internal changes within regional organisations. Furthermore, the relationship between regional organisations and other agencies is still undergoing definition with roles and relationships in relation to MER

evolving. Issues such as which agencies are responsible for maintaining the monitoring of regional resource condition are still actively being negotiated in many states.

While it is apparent that most states are adopting processes for sorting out the preferred approaches to regional scale MER, there is considerable confusion regarding roles and responsibilities for the different aspects of MER and for the data management, interpretation and selection and application of indicators.

The SORR project in Queensland defined the goal of this process as:

“Ultimately, a State of Region Reporting framework should enable regions (community, industry, governments) to understand and communicate:

- the current condition of Queensland’s natural resources;
- what actions are being undertaken to ensure sustainable natural resource management outcomes, and whether these actions are working; and
- what may need to be done in the future.” (SORR QLD 2005).

The need for a coordinated approach has been recognised for some time with the VCMC stating in 2002 that: “There is no responsible body or process for facilitating reporting arrangements, avoiding duplication, providing consistency and quality control and communicating NRM information to the community.” VCMC 2002

Furthermore, the VCMC identified that that there are clear opportunities and potential efficiencies in coordinating data management, collection, quality control, access and information sharing and use for evaluation, monitoring and reporting and that “institutional arrangements and resourcing requirements for coordination required further discussion” (VCMC 2002).

The above quote makes it clear that there have been major issues of clarifying institutional and resourcing requirements for many years. Within this context, the regional case studies are useful in profiling existing regional models, however this profiling of current practice should not divert attention from the fact that the principal impediments to wider adoption of effective MER appears to be at the level of national and/or state policy and planning frameworks, particularly with regard to the clarification of roles and responsibilities.

The following recommendation is drawn from the Qld SoR reporting discussion paper (QNRM 2005) which effectively proposes an effective way forward to improve MER so that it is useful, relevant and strategic for many regions.

### *Recommendation 1*

The responsibility for the clarification of roles and responsibilities cannot be left to individual regional organisations to work through and needs to be addressed by coordination processes undertaken at the state level and/or national scales). At a minimum these processes should address the following issues:

- promote understanding of interrelationships between natural resource management issues, pressures and condition;
- clarify roles, responsibilities and purpose between stakeholders;

- develop regionally focused and collectively agreed indicators for reporting on natural resource condition;
- align state monitoring to regional planning and reporting needs where possible and develop regional monitoring partnerships;
- develop agreed standards and approaches for data and information management in order to meet both state and regional needs;
- carry out interpreted and integrated assessments to transform data into useful information; and
- establish reporting systems to communicate to the broader community the value of investments.

## **The Main Aim of the Reporting**

### *Introduction*

Each of the case study organisations was asked to define their main aim of reporting. The aims vary considerably from the broad promotion of sustainable development (FBC) to reporting progress on specific resource condition targets (SA MDB NRMB).

Some regions aimed to produce a basic communication tool, whilst others aimed to produce very detailed status reports on resource condition. Approaches vary because frameworks and methods have evolved independently and reflect different regional structures and their needs, sometimes statutory (ARC) and sometimes a bottom up approach (BBG).

### *Findings and Implications*

#### Drivers for reporting and minimum standards

While in general reporting can be seen to be motivated by the need to be accountable to government, community and other stakeholders, there are a number of different drivers for reporting which dictate the type of reporting and the type of monitoring or information collection which underpins it. These include:

- reporting against strategy implementation including reporting against RCTs (SA MDB NRMB and FBA);
- report card summaries used as a communication tool (GINRF and MBWCP);
- engaging local government in better environmental management (HC);
- community engagement and support for bottom up approach to NRM (BBG);
- to meet statutory requirements for environmental data and assessment of effectiveness of environmental programs (ARC)
- to build consensus amongst management agencies and to educate and stimulate action for sustainable development (FBC); and

- comprehensive technical reports (SA MDB NRMB and MBWCP) driven by substantive pressures - such as salinity in the Murray and eutrophication in Moreton Bay - and the organised programs in response, including the establishment of monitoring regimes and collection of data to assess conditions and effectiveness of interventions.

One of the glaring issues with comparing the approaches adopted by regional organisations is that there are no prescribed standards for reporting. To date this has not been defined by the states as a regional responsibility. It is therefore suggested that the possibility of developing a minimum reporting standard for NRM organisations would assist those organisations understand what is expected of them by governments. Adoption of a standard would support the development of reporting capacity and a culture of accountability. The minimum standard may evolve and may be along the same lines as the expectations imposed on listed companies by ASIC. The reporting standards could be built on the rationale and guidelines articulated by the Global Reporting Initiative.

The development process should investigate the best way of establishing standards capable of incorporating the strategic and technical issues involved in NRM.

### *Recommendation 2*

The development of minimum reporting standards for NRM groups should be explored. These standards could build on the rationale and guidelines articulated by the Global Reporting Initiative. The standards could define the roles and expectation of an annual report to ensure effective adoption of approaches such as the DPSR model used in SoE reporting. At a minimum the reports should document progress in NRM strategy development and implementation, emerging issues, future directions and where possible provide evidence based on systematic measurement of changes in environmental conditions.

### Organisational or regional focus

There is a fundamental difference between the reporting approaches of regional NRM organisations that have a defined role in coordinating and delivering responses (the regional NRM strategy) and the reporting of wider coalitions where there is an attempt to report on the collective progress of the region in achieving sustainable development through integrated NRM.

Therefore there is a need to clarify whether reporting is best undertaken primarily by a regional NRM organisation on its programs and their effectiveness, or by a coalition of interested parties focusing more broadly on assessing regional pressures, conditions or responses.

The case studies profile both types of reporting. In several regions, collaborative partnerships have been established to generate regional reports (GINRF and FBC) while in others the reports are generated by organisations about their programs.

One possible way of organising these apparently disparate reporting needs is to produce comprehensive state of the region reports every five years. These could be undertaken by a consortium of key agencies and timed to be completed as a critical part of the evaluation of regional strategies, with regular annual reports of the relevant NRM bodies providing an update on progress on implementing priority responses, reassessment of emerging issues and changing pressures and evidence of changing condition.

### *Recommendation 3*

More coordinated approaches to periodic State of the Region Reporting (SORR) are required as a way of providing critical advice for policy development and the revision of regional NRM strategies. If comprehensive State of the Region Reports were to collate and synthesise relevant information on pressures, condition and responses for each region periodically (say every five years), annual reports developed by each NRM organisation (for example, each CMA) could focus on providing updates in terms of the effectiveness of the NRM responses in addressing priority issues.

#### Structuring and scheduling monitoring and reporting efforts

Most of Australia's regional NRM organisations have put considerable effort into the development of regional plans and regional investment strategies and are now engaged in developing monitoring and evaluation plans to track progress towards strategic outcomes.

However, in many regions there is limited capacity to build rigorous monitoring systems with protocols for data collection, capacity for analysis, and ability to report interpreted information back to stakeholders. NRM organisations are typically dependent on or involved in some kind of partnership with other agencies, to a varying degree, in monitoring the biophysical environment.

At the regional scale opportunities for streamlining and refining monitoring systems, such as that undertaken to create the Gippsland Regional Water Quality Monitoring Partnership should also be explored. A common format for regional NRM organisations to report on progress towards resource condition targets would be useful. This could be developed relatively easily by coming up with guidelines or a template and drawing on other best proactive examples such as Gippsland report card, SE QLD, and the Murray in SA. However an exclusive focus on the RCT and activities of the NRM organisation misses the opportunities for creating broader coalitions with a broad sustainability agenda or capacity to produce credible State of the Region Reports. A possible approach to structuring and scheduling the reporting in ways which may maximise effectiveness is proposed below:

**Table 4: An approach to scheduling and structuring state of the region reporting**

One of the key weaknesses in regional NRM is in the areas of systems understanding and resource condition reporting and therefore regional partnerships should focus effort and resources on regional assessments necessary to produce a comprehensive state of region report say every five years. The SORR activity should be produced by a multi partner consortium between the state government and regional body/s and be supported by independent scientific advice from a scientific advisory committee (as per SEQ).

The SORR could be timed so that it feeds into the evaluation, review and revision of the next catchment or regional strategy. It would then support advances in assessing the value of current NRM activities, resource assessment and systems understanding and help target future strategic interventions and investment.

On a regular basis all NRM program agencies would report on any new emerging issues, changes in pressures etc.

In this way a rolling program of regional assessment (SORR would be undertaken) which supports regional strategy revision.

This approach to scheduling would support the separation between assessing the overall condition and progress towards sustainability of the region across economic, social and environmental themes and the role of the NRM organisation in delivery of NRM strategy and programs (essentially a specific set of responses).

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#### *Recommendation 4*

That each state should consider trialling a structured approach to SORR which is based on detailed and comprehensive assessments of conditions, pressures and evaluation of responses. Such assessment would support regional bodies' identification of priorities and provide a periodic assessment of the overall effectiveness and appropriateness of current policies and strategies.

#### Reporting against RCTs

All formal NRM regions that have developed Regional Catchment Strategies have RCTs and MATs. It is expected that these Regional organisations will be increasingly required to report against their RCTs as part of their MER responsibilities.

SA MDB NRMB has developed a wide number of report cards covering 26 RCTs. When the report is complete (mid June 2006) it will have a wider focus that includes the regions requirements to provide information towards statutory and non-statutory reporting requirements.

Reporting against RCTs is likely to be the approach taken by NAP and NHT region's around Australia however the exact approach as to how regions will report on RCTs is still being worked through in most states.

#### *Recommendation 5*

The NRM Ministerial Council should consider standardising reporting approaches for NAP and NHT regions in the form of a reporting template. The template would need to be sufficiently generic to accommodate the range of regions and diversity of NRM issues. The template could build upon the template being developed in Victoria to enhance Victorian CMA MER.

## Supports Planning and Regional Decision Making

### *Introduction*

Each of the case study organisations was asked how their MER supports planning, policy development and regional decision making. Most of the case study regions claim that reporting has a significant indirect influence on decisions of other agencies. Some demonstrated evidence of direct influence on significant planning and policy decisions. MBWCP, ARC and HC have had significant success in influencing local planning, policy development, and regional decision making.

### *Findings and Implications*

#### Direct influence

Regional reporting can have significant direct influence on the planning, policy and investment decisions of other agencies whose decisions impact on the natural environment as evidenced by the following examples from MBWCP, HC and ARC and:

- MBWCP reporting lays the foundation for technically based condition and trend analysis to guide management recommendations. For example the QEPA and industry use the reporting to negotiate pollution loads, water resource planning, growth management planning and local government investment in addressing pollution sources (for example the Maroochy Shire Council's decision to upgrade a sewerage treatment plant to improve water quality discharges to the Maroochy River).
- HC have effective programs such as the HCCREMS which influences Council decisions and planning tools such as the development and enforcement of policies intended to protect biodiversity and vegetation. HC also directly services the needs and priorities of the councils for their SoE reporting as required under the NSW SoE Act.
- The ARC catchments planning and impact modeling is a primary determinant of where urban land development occurs in the region. The ARC's success is attributed to the clarity and power resulting from the legislative reforms (Resource Management Act) which established a defined role for monitoring to support land use planning, policy development and the evaluation of programs.

The MBWCP and ARC monitoring programs have established their scientific credibility by ongoing programs of focused R&D. These established R&D partnerships appear to play a critical role in ensuring that the monitoring has sufficient credibility to support planning, policy development and regional decision making.

#### Organisational models: consensus, influential or statutory power

The case studies demonstrate that there are two prevailing models backing regional reporting. These different models are either focused on using reporting as an influential instrument (seven of the eight case studies) versus integrated monitoring as part of wider

planning and environmental protection responsibilities established by legislation which integrates these roles into a single organisation (ARC).

Monitoring environmental conditions and the effectiveness of policies is a statutory requirement under Section 35 of the RMA in New Zealand. Regional councils are required to collect and keep representative data on natural resources and the environment in their region. The ARC identifies major issues and answers typical SoE questions based on the PSR model. Every five years a major State of the Region report is prepared and released.

Given that in Australia all reporting is occurring within the consensus, influential model the fundamental question for MER is how to maximise such influence

Influence appears to be maximised by:

1. Influencing other organisations and industries with natural resource decision making responsibility. For example:
  - better engage local government and planning agencies powers in NRM (HC, MBWCP and GINRF); and
  - liaison with the mining industry to accept greater responsibility for net regional biodiversity outcomes in FBA region.
2. Scientific credibility:
  - develop R&D strategies and partnerships to support NRM and NRM reporting (MBWCP and ARC); and
  - bring credibility via access to high quality technical advice
3. Via the media and community engagement/education such as:
  - FBC;
  - MBWCP;
  - GINRF; and
  - BBG.

### *Recommendation 6*

Efforts to improve the effectiveness of integrated regional NRM reporting should focus on ensuring scientific credibility and stakeholder engagement.

## **Linked to NRM Planning and Investment Decisions**

### *Introduction*

Each of the case study organisations was asked how their MER supports NRM planning and investment funding decisions. All of the case study regions claim that reporting has a significant direct influence on NRM funding decisions via the RCIP and RCS.

### *Findings and implications*

In Australia there is fundamental difference between the roles of regional groups established or formally recognised as the NRM body (for example a CMA) versus other regional bodies that are less directly involved in the NRM funding process. The latter tend to be partnership bodies which have emerged to address regional needs for cooperative planning and reporting (GINRF, BBG, MBWCP and HC).

#### NRM bodies that influence NRM funds

The defined purpose of the SA MDB NRMB's MER is to report progress against the RCTs in their plan, and use information generated to prioritise projects, and to attract and direct NRM investment.

The FBA is only reporting on MATs. It sees the need and is interested in undertaking State of Region Reporting, which includes the ability to address resource condition and trend.

BBG used detailed zone action plans to prioritise issues and investment at a sub catchment scale. The BBG is no longer responsible for setting NRM funding priorities as this is now undertaken at the scale of the South West Western Australian NRM region. It is assumed that under these relatively new NRM arrangements the former MER within the Blackwood basin will influence NRM funding allocations to the region.

There is a need to tailor monitoring, evaluation and reporting to assess progress towards achieving actual resource condition outcomes. There is much reporting on inputs and outputs (activities) but organisations are having difficulty with reporting on outcomes.

Within Australia, a multitude of indicators and targets have been defined. For example, there are 550 defined CMA RCTs in Victoria. There are also a vast number of indicators defined at the state, regional and national level, however NRM organisations are struggling with linking targets to indicators and linking data to indicators. Many of the RCTs and indicators are ill defined.

SA MDB NRMB generates report cards on the priority biophysical issues which document current condition and trend for each of their targets (RCT) defined in their plan. These will be annually reviewed and used to report progress against plan. In addition to the focus on RCTs they will also produce a resource condition report which has a wider scope.

All NRM organisations have been required to assemble relevant information on resource condition, NRM priorities and emerging issues in order to develop their RCSs and RCIPs. They are also required to acquit government expenditure and undertake annual planning exercises. There is an opportunity for regional NRM organisations to use the information they gather for multiple applications.

### *Recommendation 7*

Regional NRM organisations should investigate how they can develop a more systematic approach to regional reporting that enables them to report on condition, pressures and progress towards targets (RCTs) by utilising information already used to prioritise issues, acquit government expenditure, and report on outcomes of NRM efforts.

### Partnerships that influence NRM funds

Data and information from the HCCREMS in the Hunter has been used by the Hunter Central Rivers CMA to assist with guiding the formation of the Catchment Action Plan and investment priorities.

The monitoring and reporting of environmental conditions and the pressures in South East Queensland have helped influence major infrastructure investment strategies to address point source pollution and the defining of assets of high ecological value to assist in NRM planning.

The FBC plays an active role in carrying out research to assist planning and investment decisions but mostly influences these indirectly.

By bringing credible information on ecological conditions and pressures to the attention of the public and decision makers, reporting can be a powerful way of influencing decisions effecting the environment. The MBWCP has successfully influenced regional scale and municipal investment decisions, including the investments in major sewerage treatment plant upgrades.

## **Effectiveness in Terms of Community Engagement**

### *Introduction*

Each of the case study organisations were asked whether their reporting has been effective in terms of engaging the community. Some placed greater emphasis on reporting to the community while others focused more on internal processes and requirements of government agencies.

### *Findings and Implications*

#### Scorecards

Some regions have given priority to community engagement via their reporting particularly via easily understood report cards. These reports have been developed as a communication tool and have been very effective in Gippsland, South East Queensland and Fraser Basin. The simple score cards seem to be the most powerful types of tools to report to the community using simple language, visual icons, maps and easily understood rating systems.

Despite these similarities the above examples differ substantially:

- MBWCP focuses on fresh and estuarine water quality as an integrative indicator of ecosystem health. The findings of a comprehensive, science-based monitoring program are used to support their score card ratings.
- GINRF uses rating of the condition and the level of stewardship for key assets in the region (such as the Gippsland Lakes, Snowy and Latrobe Rivers and 90 Mile Beach).

- FBC uses a comprehensive range of economic, social and environmental indicators and ranks progress towards sustainable development by ranking them according to traffic light summaries (green, yellow red).

Score cards appear to be important in generating pressure on management agencies by ensuring greater scrutiny on them to make decisions that protect the environment. Another advantage of the score card system is its ability to provide a more structured approach to collecting data and allocating scores on a set of consistent indicators over a period of time, which has the effect of educating and engaging the regional community.

Report cards are useful for a range of reasons but need to be supported by monitoring systems that are capable of generating accurate information on resource condition (for example MBWCP). To maintain credibility over time scorecards need to be supported by rigorous data and that data will need to be available for public scrutiny.

Community engagement can be achieved via other means (for example the Blackwood Basin ran a conference focusing on the condition of the catchment and subsequently ran detailed consultation processes) and the ARC has had high profile involvement in planning disputes and court decisions which have had wide media coverage.

#### *Recommendation 8*

Given that governments are investing in regional NRM strategies that depend on influence, ways of maximising this influence by regular reporting to community and influential stakeholders should be supported through the use of tools such as scorecards and snapshot reports.

#### *Recommendation 9*

Regional NRM bodies should investigate the production of scorecards where they are confident that they can be supported by a credible basis for reporting which has at least been subjected to scientific peer review. Regions that are data poor should develop scorecards to start the reporting process by using existing information and build and develop the tool on an annual basis.

#### *Recommendation 10*

The successes of scorecards depend on good science and scientific credibility. In the case studies this was enhanced by the support of independent chairs and/or scientific advisory panels.

### **Used for Longitudinal Study and Trends Assessments**

#### *Introduction*

Each of the case study organisations was asked whether their MER was used for longitudinal study and trend assessments. Many regional organisations have been established relatively recently and therefore rely on data from other agencies and/or prior studies for any trend assessment.

## *Findings and Implications*

### Roles and responsibilities

Longitudinal study and trends assessments require the organised collection of data over an extended period and its interpretation. Australia lacks a comprehensive framework for long term ecological research so that trend information is scarce for many environmental parameters in many regions.

Only those regions that have rigorous data can use this for trend assessments and longitudinal studies. This is a critical element in assessing whether NRM investment is having the desired impact on resource condition.

Regional organisations generally rely heavily on data derived from state agencies that has generally been collected for a given purpose in the past. However, there is substantial confusion over roles and responsibilities regarding environmental monitoring particularly since regionalisation of NRM.

Some regional bodies now recognise that they are only one delivery mechanism operating in a region therefore there is a need for strategic regional assessment of monitoring needs, capability and the definition of roles and responsibilities. The role of state government needs to be reviewed such as in the proposed State of Region Reporting in Queensland.

Two of the case studies illustrate how such a process of clarification can be executed. In SEQ, all relevant water quality monitoring programs were reviewed leading to the adoption of a new integrated ecosystem health monitoring program. In Gippsland, a process was established to clarify roles and responsibilities for water quality monitoring leading to the formation of the Gippsland Water Quality Monitoring Partnership.

### *Recommendation 11*

In order to overcome the confusion regarding roles and responsibilities for environmental monitoring, processes are required to define roles and responsibilities and determine what data and monitoring program currently exists and ways in which this can be used to develop rigorous monitoring frameworks including how to incorporate data from past monitoring programs.

### Trend Assessments

All case studies acknowledge the importance of trend assessment but varied in their access to long term information.

For example, the ARC requires that all specifications for monitoring must meet certain prescribed trend power. Some monitoring in this region goes back to 1983 but most became more robust after 1990. Monitoring efforts are regularly reviewed to ensure their capacity to yield trend information.

The SA MDB NRMB has trend assessment built into the 26 RCT score cards as an important element (including no available trend, downward trend, stable, positive trend, or target met or exceeded).

In SEQ considerable investment in scientific based monitoring has facilitated analysis to begin to interpret condition and trend information against natural perturbation. SEQ developed a purpose built monitoring system based on best available science.

In Gippsland, GINRF has embarked on the public reporting process and by being committed to this over time, intends to adopt progressive improvements.

### *Recommendation 12*

Regional organisations need to define relevant indicators for their priority issues; to undertake a data audit to determine what data is available to support assessment; and develop strategies for ongoing collection and reporting on available data. Where there are critical deficiencies identified, cooperative research strategies may be required to ensure scientifically rigorous monitoring and reporting.

## **Useful for Refining Monitoring Systems and Focusing R&D**

### *Introduction*

Each of the case study regions was asked whether their MER was used for refining monitoring systems and focusing R&D. Much of the process of focusing R&D is indirect, due to drawing attention to priority issues. Some regions have developed processes that are used to formally focus R&D.

### *Findings and Implications*

Several of the case studies demonstrate the value and importance of linking environmental research and environmental monitoring. For example, the ARC has established a continuous improvement model for its monitoring systems and focuses R&D via a formalised commissioning of R&D projects.

In South East Queensland, R&D has been expanded through the advice from the scientific expert panel tracking the findings of the monitoring program. Both ARC and SEQ actively commission R&D to address their NRM priorities such as protecting estuarine health, or tracking systems for terrestrial sediment and nutrient sources.

The SEQ Ecosystem Health Monitoring Program (EHMP) is a comprehensive integrated monitoring program with a 'catchment to coast' philosophy. It targets water quality objectives for both freshwater and estuarine/marine environments. One of the tasks of the original NHT1 project (1996-1999) was to design and implement a baseline monitoring program. This is now a key component of the strategy with an annual expenditure of \$2.7 million and has benefited from more than six years of scientific input. It is recognised that refining monitoring and focusing R&D gains significantly from peer review. A trial is looking at how to integrate community and local government involvement in monitoring including the development of accredited manuals for data collection.

The ARC commissions \$3 million of R&D per year with the majority undertaken by the Crown Research Institute and universities. The monitoring systems are subject to continuous refinement. All programs are submitted for independent peer review every five years, with the following questions asked:

- Are the management questions relevant?
- Is the monitoring useful?
- Is the approach relevant and appropriate?
- Is it cost effective?

Based on the review of the approaches adopted in SEQ and ARC, effective monitoring systems adopt stringent scientific standards and are subject to peer review. However, effective NRM research partnerships are not necessarily reliant upon access to large amounts of funding. Partnerships can be influential in attracting additional funds or redirecting existing research efforts.

### *Recommendation 13*

Regional NRM groups and / or relevant state agencies establish R&D partnerships tasked with the roles of designing and refining effective monitoring systems and overcoming critical R&D gaps

## **Alignment with National Monitoring and Evaluation Framework**

### *Introduction*

Each of the case study organisations excepting the international regions were asked whether their MER aligns with the National Monitoring and Evaluation Framework.

### *Findings and Implications*

Most states are in the process of further refining their approach to MER. Most Australian regions are typically waiting for clarification of the regional and or state wide framework on MER before embarking on selection of final indicators.

Most of the case study regions have developed indicators based primarily on priorities in their region with the exception of SA MDB NRMB where indicators are deliberately selected to be aligned where possible with the NMEF. After initial selection based on regional needs, GINRF has also chosen indicators that align where possible.

The Australian case studies show that regional NRM priorities dictate the types of indicators chosen at a regional scale. While alignment with some of the NMEF indicators is clearly possible, regions need to complement these with indicators that are directly relevant to their needs.

## **Recommendation 14**

There is a need for better processes to support the selection of relevant indicators and related datasets which relate to strategic objectives at the regional and national scales. This process needs to be undertaken at a scale greater than individual CMAs, for example by a state agency or catchment council and coordinated nationally at a strategic level only.

## **Key Information and Data Sets Used**

### *Introduction*

Each of the case study organisations were asked which key datasets were drawn upon for their reporting.

### *Finding and Implications*

Some reporting is supported by rigorous data, others are more subjective.

The availability of data and to a large extent the focus of scientific monitoring has been largely driven by the severity of pressures within a region. SA MDB NRMB and MBWCP base their reporting on a number of comprehensive data sets relating to key environmental issues that have been monitored for some time due to the significance of their NRM issues - salinity in the lower Murray and water quality in Moreton Bay.

For over a decade concerns about declining water quality in South East Queensland have been exacerbated by the region's rapid population growth. The region's population is currently around 2.6 million people but it is estimated that the population will grow by another million people in the next 20 years.

The South Australian Murray region is faced with increased salinity and major issues relating to use and availability of surface and groundwater flows.

However with the exception of established NRM issues, there is frequently a lack of suitable long terms data sets that can be used for integrated catchment reporting. This was well recognised in the NLWRA regional trials project.

## **Reporting that Integrates Socio-Economic Information**

### *Introduction*

The project set out to explore the extent to which NRM reporting incorporates socio-economic information. Socio-economic information can be narrowly defined as that which relates directly to NRM such as the age and income of farmers or more broadly defined to include the full range of socio-economic information collected by governments, relevant to regional sustainability, including community health, education levels, and economic diversification etc.

An extensive literature review (incorporated in Report 1) and two evaluation criteria were used to explore this issue.

### *Findings and Implications*

Most Australian regional organisations focus primarily on biophysical factors in NRM and only occasionally bring forth socio-economic information where it relates to NRM. Regional strategies and reports only marginally address broader issues like health, education or employment (which is readily available information and is used throughout the world as standard measures to profile the socio-economic status of communities). This may be due to the fact that NRM bodies have a relatively narrowly defined “charter” re socio-economic issues, or because this kind of information is not generally collected or presented on boundaries that conform to the NRM boundaries.

Some case study organisations exhibited an interest in the socio-economic issues that relate closely to NRM. For example, the BBG actively used community surveys to gain a profile of priority NRM issues and community capacity to address these issues.

Those regional organisations based on broad partnerships (FBC and HC) or the integration of government responsibilities (ARC) actively report on broader socio-economic indicators. The ARC and FBC take a broader approach to sustainability reporting bringing into account the socio-economic factors. The Fraser Basin Council has developed a reporting framework where more than half of the Sustainability Indicators are based on socio-economic parameters.

HC has a broader focus and is not an NRM organisation. HC provides councils with a greater understanding of catchment and environmental issues to complement the council’s strong economic and social agenda.

Traditionally local government is the champion for community and economic development. In Australia the greater involvement of local government in NRM is one way to achieve broader integration of socio-economic issues.

Within Australia, most regions currently focus on NRM issues in terms of reporting but these could be relatively easily expanded if the regions utilised existing data sets held by governments on key socio-economic trends relevant to sustainability (such as the FBC). However, NRM regional boundaries often do not conform to the boundaries used for the collection of socio-economic data and some slight adjustment in how data is collected or presented could redress this.

### *Recommendation 15*

Agencies such as the ABS, ABARE and BRS should consider trialling the provision of relevant socio-economic data, based on existing data sets for use by NRM regions in ways which align with their boundaries and priority needs.

## **Use of MER for NRM Adaptive Management**

### *Introduction*

Adaptive management theory provides a clear framework not just for adapting plans over time but also for capturing the “learnings” from NRM in terms of better understanding of the natural systems being managed.

The project set out to determine how current approaches to MER are being used to actively support adaptive management. While all NRM regional organisations could define their planning and management efforts as examples of adaptive management, not many of the regions profiled in Australia could demonstrate strong links to adaptive management. There was limited appreciation of ways of deliberately linking monitoring and management interventions to active development of knowledge of natural systems. More importantly, there seemed to be limited appreciation of the way the evaluation and analysis of the impact of intervention can be fed back into processes for reviewing assumption and re-conceiving of the natural system models which are used as the basis for taking particular NRM actions.

### *Findings and Implications*

HC assists councils in the adaptive management cycle by provision of information on environmental significance or sensitivity. For example, information is provided to councils on the extent and distribution of vegetation communities under pressure from housing development so that appropriate measures can be taken to ameliorate the impact on significant or sensitive vegetation communities.

The ARC stands out in terms of institutionalising adaptive management under the intent and provisions of the resource management act. This form of adaptive management - linking modelling, monitoring and policy, planning and practice - is both scientifically robust and legally defensible under the planning laws established by the Resource Management Act (RMA).

### *Recommendation 16*

R&D and NRM organisations actively explore opportunities for joint projects with the objective of further developing understanding and capacity for active adaptive management.

### **Key Success Factors**

Based on the case studies evaluated, the following key success factors have been extracted:

- Strong inter-agency collaboration is vital. Large amounts of information reside with State agencies which is vital to develop a strategic view on resource management priorities.
- Sustainability reporting based on partnership arrangements needs to incorporate influential organisations and individuals, but an independent chair or an independent scientific panel is useful to balance influence with independence
- Partnerships benefit from a breadth of partners and a clearly defined vision
- There is value in formalising linkages with key research bodies and people

- Reporting coalitions can define their purposes in terms of providing information to key decision makers in a form relevant to their responsibilities
- Reporting often succeeds by adopting a willingness to interpret and report using whatever information is available, and also to highlight major issues for which more information is required
- Engaging the community directly and via the media, depends on reports that are well designed to communicate key messages, and which are non technocratic

# Summary of the Case Studies

## Australian Case Studies

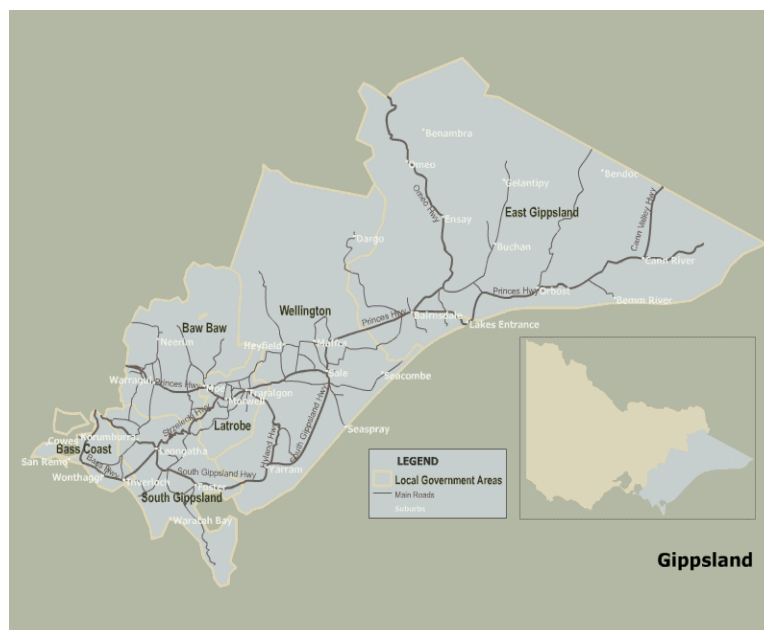
### VIC Gippsland Integrated Natural Resource Forum (GINRF)

The Gippsland region lies in the far south-east of Victoria. The West and East Gippsland Catchment Management Regions cover approximately 18% of Victoria.

The region provides 95% of Victoria's electricity, 60% of Melbourne's water storage capacity, and 20% of Australia's milk production. Activities within the catchments alter water flows and quality, affecting the health of rivers and these internationally important wetlands. The northern boundary of the region is the Great Dividing Range, with Mt Howitt the highest point in the region at 1738 metres. The Baw Baw Plateau at 1566 metres projects southward from the Great Divide. The region is divided by the Strzelecki Ranges, a deeply dissected range with steep hills to a height of some 500 metres and deep valleys. The South Gippsland River Basin includes several river catchments that drain to the south of the Strzeleckis to Bass Strait between San Remo and Lakes Entrance. The Latrobe and Thomson River Basins rise on the southern fall of the Great Divide and drain to north of the Strzelecki Ranges to Lake Wellington.

The following river basins are located in the Gippsland region - East Gippsland, Snowy River, Tambo River, Mitchell River, Thompson River, Latrobe River, Nicholson and South Gippsland.

The Gippsland Integrated Natural Resources Forum (GINRF) is a whole-of-Gippsland approach to the management of the region's natural resources under the slogan *Catchment Health – Gippsland's Wealth*. The role of the Forum is to achieve a cooperative and strategic approach to natural resource management in the region.



The vision of the Forum is to: “*Unify the efforts of Gippsland’s natural resource managers, to ensure the cultural, economic and social activity of Gippsland is conducted in harmony with its environment.*”

The Forum has a membership of some sixty organisations including government departments, catchment management authorities, municipal councils, rural and urban water authorities, universities, private industry, regional development bodies, community based groups (such as Landcare), and cross agency groups (such as Gippsland Research Coordination Group). A Reference Group and Executive are drawn from the broader Forum membership, with an independent chair: Professor Barry Hart.

Five strategic elements direct the Forum’s activities:

- Leadership - a visionary approach to integrated natural resource management in Gippsland
- Collaboration - agreement on priorities and alignment of action
- Knowledge - better decisions through greater access, use and generation of research and knowledge
- Strategy - facilitating the development and implementation of major natural resource strategies (such as the Regional Catchment Strategies)
- Reporting - annual, independent reporting on the condition and stewardship of Gippsland’s natural resources

#### *Nature of reporting*

The GINRF has developed a natural resources score card. The score card includes condition and stewardship ratings for twelve natural assets in the region. The scorecard is supported by a document which outlines information about the background and methodology of the report card development and provides further explanation about the condition of the assets.

The purpose of the scorecard is to foster the strategic integration of natural resource management, provide a credible independent and regular evaluation of natural resource management in Gippsland and cultivate a strong regional identity for Gippsland based on natural resources.

#### *Critical findings*

Critical findings relating to the GINRF scorecard include:

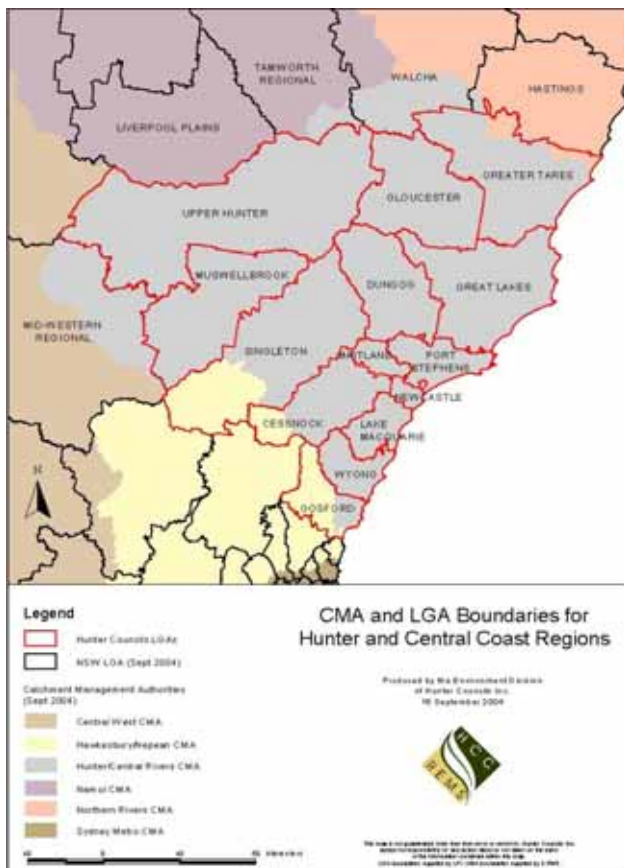
- the reliance upon an independent chair with scientific credibility to finalise condition and stewardship ratings;
- use of the SEQ model;
- gradual adoption and reference to MERG indicators;
- use of the global reporting initiative framework;
- low cost;

- public engagement;
- ongoing refinement;
- multi agency commitment; and
- broad sheet – score card and media exposure.

### NSW Hunter Councils (HC)

The Hunter region covers an area of 31,000 km<sup>2</sup> (approximately 3.9% of NSW) and is situated in eastern NSW north of Sydney. The region is home to nearly one million people and supports the growing population centres of Newcastle, Maitland, Lake Macquarie, Taree and Gosford as well as Cessnock, Singleton, Muswellbrook, Scone, Merriwa, Gloucester, Forster, Tuncurry, Port Stephens, and Wyong. The region includes the Northern Rivers CMA and parts of the Namoi, Hawkesbury Nepean and Northern Rivers CMAs. The Hunter Region includes the IBRAs of Sydney Basin, NSW North Coast and the Brigalow Belt South (Upper Hunter Local Government Area)

The region’s major waterways are the Manning, Karuah, Hunter and head waters of the Goulburn River and the coastal waterways of Wallis Lake, Port Stephens, Lake Macquarie, Tuggerah Lakes and Brisbane Waters. The region’s landscapes range from estuarine lakes and mangroves, coastal sands and rich alluvial floodplains to rural hinterland, forests and the dissected sandstone of the Great Dividing Range. The region supports a range of land uses including coal mining, quarrying, power generation, heavy industry, urban development, tourism and recreation, forestry, aquaculture and a wide range of agricultural industries including wine making, wheat, sorghum and potato production and the equine industry.



HC is an incorporated body comprising 14 local government areas within the Hunter Region. Hunter Councils Inc represents approximately 550,000 people and covers an area of 30,000km<sup>2</sup>. An association of Hunter councils commenced in 1993 and has undergone several structural changes since then. A new corporate model was adopted in 2002 that required the members of the former Hunter Region Organisation of Councils (HROC) to form a company limited by guarantee. The organisation is now known as Hunter Councils Inc.

### *Nature of reporting*

The Hunter and Central Coast Regional Environmental Strategy (HCCREMS) is an innovative and highly successful regional initiative being implemented through the collaborative efforts of fourteen councils in the Hunter, Central and Lower North Coast of NSW since 1996. The steering committee for the HCCREMS is the same as the Local Government Reference Group for the Catchment Management Authority.

HCCREMS seeks to facilitate a regional approach to ecologically sustainable development by actively encouraging greater co-operation between member councils, state and federal authorities, industry and community groups. The strategy has been very successful in attracting funding and resources to implement its key regional projects and has established strong partnerships with a range of organisations concerned with environmental matters.

The HCCREMS aims to influence council decisions and planning tools such as policy concerning key regional environmental outcomes. The aim is to do this through:

- Raising awareness and the profile of these key issues
- Undertaking research programs
- Designing and implementing key regional programs
- Designing and delivering NRM capacity building programs for councils staff, management and elected representatives
- Regional NRM trend reporting

This has been demonstrated to be effective in several instances such as through influencing the development of new Local Environmental Plans (LEPs) and policy shifts that have incorporated findings from the HCCREMS process. Findings from the HCCREMS have also been incorporated into Council Code of Practices, Planning Instruments, SoE Reporting, Corporate Management Plans and budgets.

### *Critical findings*

Councils in the Hunter Region have recognised that there are synergies and efficiencies in working together to address natural resource management issues that are common across council boundaries

Fourteen councils are represented by HC. Within the Environment Division of HC a number of environmental and sustainability programs are coordinated most notably the Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS). This strategy includes projects such as:

- Regional Biodiversity Conservation Strategy
- Urban Water Cycle Management Program
- State of the Environment Reporting
- Regional Weeds Program.

- Climate Change Research Program
- Coastal and Marine

The HCCREMS facilitates and raises the awareness and profile of key regional environmental issues that council has the ability to influence.

The HCCREMS process has demonstrated success in influencing a range of council decisions and behaviors such as Local Environmental Plans, Council Code of Practices, Planning Instruments, SoE Reporting, Corporate Management Plans and budgets.

The HCCREMS has worked cooperatively with State and Commonwealth government programs and frameworks and has integrated State, local and regional data sets and knowledge successfully. In addition it has been very successful in establishing its own research and funding partnerships. HCCREMS utilises scientific advice and technical research and monitoring programs to support both decision making and investment at both the local and regional levels.

The HCCREMS success can be attributed to a strong culture of initiative, independence, a strong drive to succeed and the involvement and leadership of champions.

### SEQ Moreton Bay Waterways & Catchment Partnership (MBWCP)

The case study region is located in south east Queensland and contains the IBRA subregions of Moreton Basin, Southeast Hills and Ranges, Southern Coastal Lowlands, Brisbane – Barambah Volcanics (part), and South Burnett (part). The region's hydrology is dominated by the following river catchments - Brisbane, Logan, Caboolture, Pine Rivers and other smaller creeks flow into Moreton Bay while the Pimpama, Coomera and Nerang Rivers flow into southern Moreton Bay and the Maroochy, Mooloolah and Noosa Rivers in the northern part of the region flow directly to the Pacific Ocean.



The Moreton Bay Waterways and Catchment Partnership has been established as a whole of government and community framework for the integrated and sustainable management of the waterways and catchments of the South East Queensland region, including Moreton Bay.

The Partnership was established in 2001 by the merger of the South East Queensland Regional Water Management Strategy Project and the Brisbane River Management Group.

The Partnership built on work initiated in the 1990s with modest goals directed primarily at the Brisbane River and Moreton Bay. Now it encompasses the complete watershed of South-East Queensland

#### *Nature of reporting*

Freshwater, Estuarine and Marine Ecosystem Health Report Cards per catchment, estuary and adjoining marine areas are published annually from information obtained through the Ecosystem Health Monitoring Program (EHMP). The Ecosystem Health Monitoring Program (EHMP) is a comprehensive monitoring program with a 'catchment to coast' philosophy. It targets water quality objectives for both freshwater and estuarine/marine environments. This is a key component of the strategy with an annual expenditure of \$2.7 million and has benefited from more than six years of scientific input.

Freshwater and estuarine/marine indicators are reported against across 120 sites. For freshwater, five indicators are used that may be modified directly or indirectly by human activities with a number of indices for each. These indicators are: physical and chemical; nutrient cycling; ecosystem processes; aquatic macroinvertebrates and fish. The key estuarine indicators are: total phosphorus; turbidity; chlorophyll a; dissolved oxygen; total nitrogen.

Data collection is based on criteria and standards developed for the Ecosystem Health Monitoring Program. Data is co-ordinated in a centralised data base with the Queensland Environmental Protection Agency contracted to manage the data base. This data will be used in the current five year review of the Water Quality Management Strategy and the Partnership will be using the information in negotiating revised actions annually for the rolling business plan.

Separate catchment, estuary and marine scorecards are then developed using these indicators. For an example, refer to the EHMP Annual Technical Report 2003-04.

This comprehensive monitoring program provides a solid basis for strategic evaluation of investments to link management interventions with condition and trend data. The Partnership now proposes further R&D to be able to better understand cause and effect relationships relating to management interventions, the benefit cost opportunities of proposed interventions in terms of resource outcomes and human health risk assessment. The Partnership is placing these issues before their scientific expert panel, which contains considerable expertise drawn from academia, State and local government, CSIRO and elsewhere.

#### *Critical findings*

The Moreton Bay Waterways and Catchment Partnership has supported planning and policy development at a range of levels. At a higher level it has provided decision support tools used by the Queensland Environmental Protection Agency and by industry to negotiate pollution loads for licences under legislation, for water resource planning and as part of future growth management planning for SEQ. At a catchment level, a notable example was the publicised decline in water quality in the Maroochy River through the annual scorecard. This led to a significant investment by the local authority into point source and diffuse source remediation.

The considerable investment in scientific based monitoring has facilitated analysis to begin to interpret condition and trend information against natural perturbation.

Community engagement and partnership building through the publication of annual scorecards for each catchment, estuary and adjoining marine areas has been a successful approach to advocate water quality issues politically and with the media and the community. There have been a number of factors identified that have contributed to the success of the MBWCP including:

- clearly defined focus by the Partnership;
- technical monitoring program supporting decision making and investment;
- scientific advice through the Scientific Expert Panel;
- breadth of partners associated with the Partnership and therefore a shared vision;
- sophisticated reporting in publications and web based;
- the development of catchment, estuary and marine report cards that easily translate technical data to readily understood results; and,
- reporting is targeted in terms of strategic outcomes and is technically based.

Some limitations experienced include the capacity to deal with the rural diffuse pollution load and mechanisms to effectively influence agricultural activities to reduce such pollution. To meet the monitoring needs and to be able to contribute to the wide policy needs of a large number of partners requires considerable on-going political support and commitment.

### **Queensland Fitzroy Basin Association (FBA)**

The Fitzroy Basin is a vast area of central Queensland that includes a diverse array of land types. It surrounds the Tropic of Capricorn in central Queensland and is a significant catchment of the Great Barrier Reef lagoon.

A dominant feature of the Fitzroy Catchment is the extensive Brigalow Belt plains and alluvial floodplains. These rich and highly productive systems have been extensively developed with much of this development occurring prior to the emergence of a broader community understanding of the need to protect biodiversity. Consequently, there is only a minimal amount of the vegetation and wetland systems managed for conservation including the establishment of protected areas.



The region's population of 200 000 over 156 000 km<sup>2</sup> means that there is generally a low population density outside of the few major centres. There are significant areas of the region in which youth net migration is a challenge and where the population is aging and declining leading to a loss of rural services, particularly social services. In general, the larger centres of Emerald, Rockhampton, the Capricorn Coast and Gladstone are taking up the population drift and are able to create business and employment opportunities.

The Fitzroy Basin Association (FBA) is a community based organisation that promotes sustainable development in central Queensland. FBA involves the region's major natural resource management stakeholders who have an interest in the use and management of the natural resources of the region.

Under the NAPSWQ, the Fitzroy Basin Association (FBA) is responsible for the development of an integrated regional natural resource management plan, for the Fitzroy Basin, Boyne Calliope and associated coastal catchments. The regional plan, the Central Queensland Strategy on Sustainability (2<sup>nd</sup> Edit) (CQSS2) is designed to focus on regionally significant assets and pressures. The information brought together for the Fitzroy Catchment in the plan is divided into land use and management; terrestrial biodiversity; inland aquatic ecosystems; estuarine and marine aquatic ecosystems; water quality and social and economic profile.

Priority natural resource management issues identified through this planning process include:

- sediment management and potential impact on the Great Barrier Reef;
- vegetation management with high rates of clearing having occurred on the fertile brigalow soils. As well as loss of regional biodiversity the impact of clearing on deep drainage and potential salinity is an important issue; and
- the FBA has funded a position to develop a biodiversity strategy with coal companies and to explore the possibility of off-sets being devised to secure regional net benefits for biodiversity as distinct from focusing all of the environmental effort on the mining site.

### *Nature of reporting*

The FBA is keen to proceed beyond current output reporting to meet government requirements so that an effective link can be made in assessing progress towards actual sustainability outcomes and agreed targets established through the regional plan and actions in the three year rolling Regional Investment Strategy. Investments are being made on priority issues not captured in current reporting arrangements, e.g. vegetation regeneration, as distinct from tree planting, which is an important opportunity in this region.

New reporting mechanisms are required to promote community engagement so as to 'tell the story' in terms of management actions contributing to sustainable resource management. Promoting successful farmer case studies is seen as useful in assisting such engagement.

It is envisaged that the development of proposed State of Region Reporting (SRR) in conjunction with the Queensland Department of Natural Resources and Mines would assist in reporting being tailored to support effective planning, policy development and decision making. SRR could provide the critical link between developing an ability to evaluate monitoring data and the next cycle of planning.

Key aspects of proposed State of Region Reporting are:

- clarify roles, responsibilities and purpose between stakeholders;
- promote understanding of interrelationships between natural resource management issues, pressures and condition;
- develop regionally focused and collectively agreed indicators for reporting on natural resource condition;
- align State monitoring to regional planning and reporting needs where possible and develop regional monitoring partnerships;
- data and information management to meet regional needs;
- carry out interpreted and integrated assessments to transform data into useful information;

### *Critical findings*

The FBA has achieved a good regional profile and is gaining community acceptance. The setting of agreed targets by the community is a positive step in this regard. The long history of an integrated catchment management presence as a forerunner to the current regional body has been important in building broad stakeholder and community engagement. The building of corporate knowledge through the retention of staff has also been an important contribution.

The good relationship with State Government departments and their co-operative involvement in identifying priorities e.g. for biodiversity has been very important. Also, there has been high value derived from integrating with State held information sets.

There is a need to tailor monitoring, evaluation and reporting to assess progress towards achieving actual resource condition outcomes. The development of SRR in Queensland could be one effective means to achieve this. There is a need for a strategic view of the totality of natural resource management effort required and currently being invested in the region across agencies and levels of government to better identify the regional body's role and contribution. Cross region processes also are required to look at bigger strategic issues that cannot be addressed in any one regional plan and investment strategy.

### WA Blackwood Basin Group (BBG)

The Blackwood Region covers the catchments of the Blackwood, Margaret and Scott Rivers, including the Beaufort, Arthur, Chapman and Buchanan Rivers – an area of 28 000 square kilometres from Kukerin in the east, to the Hardy Inlet at Augusta.

Major towns include Narrogin, Katanning, Bridgetown and Nannup. The catchment is divided into three distinct zones. The upper reaches are agricultural (largely sheep and wheat), the middle reaches are a combination of broad-scale agriculture, forestry, and the area from Nannup to the inlet is a combination of forestry, conservation and tourism.

The Blackwood Region faces environmental challenges common to many areas of south west Western Australia including salinity, erosion, waterlogging and the decline of biodiversity. Over 80% of the streams and wetlands in the Blackwood Catchment are severely degraded due to clearing, grazing, burning and erosion.



The BBG is a recognised sub-regional group for NRM. The Blackwood Basin Group is a community operated organisation that delivers assistance to achieve sustainable land management across the Blackwood Basin. The Group specialises in accelerating on-ground action through coordination of natural resource management and education.

The group is now recognised as a subregional part of the south west region under the new NRM arrangements that were put in place in 2003.

The BBG has been active since inception in 1992. In 1990 more than 230 people at a landmark conference in Bridgetown first voiced concern about the declining state of the Blackwood Catchment's natural resources. For the first time, issues were raised across a regional, catchment-wide area.

Following this a steering committee was formed to set up guidelines for the establishment of the Blackwood Catchment Coordinating Group, as it was then called.

In 1992 the Blackwood Catchment Coordinating Group was formed to provide leadership, coordination and education to promote sustainable resource management in the Blackwood Basin. The group later changed its name to the Blackwood Basin Group (BBG) to more clearly reflect the geographical area managed by the group.

#### *Nature of reporting*

The Blackwood Region had intensive monitoring programs and frameworks in place up until two years ago including:

- State of Zone reporting (based on SoE) and collation of information at the sub-catchment scale (referred to as zones). The most comprehensive zone report was undertaken for the most easterly zone, known as the Dumbleyung area;
- the zoning system was based on the physical properties of the environment. The Blackwood Region covers an area with a length of over 800 km and it is difficult to neatly define the area into subcatchments. To overcome this issue zones were formed based on soil type, hydrogeological boundaries, vegetation type, land use and social catchments;
- a community water quality monitoring system. The monitoring approach for this system has changed from when it was originally developed. A once a year snapshot approach (which went for seven years with approximately 400 sites on any given day) developed to a more intensive strategic approach in priority areas;
- co-ordinated frog and bird monitoring;
- groundwater monitoring;
- biodiversity program aimed at ranking the 20 000 remnant vegetation sites on private land according to conservation value (size, shape, representativeness, distance to other stands, salinity risk). This was developed using GIS then ground truthed with community assistance. A grant program was then developed aimed at protecting the top 10% of remnant vegetation sites on private land; and
- visits to grants sites to assess success of the projects. Results from the Community Partnership Program were written into a report and all grant sites were mapped.

#### *Critical findings*

- Since regionalisation, all MER is now done on a project by project basis and there is no-basin wide or sub region MER. Basin wide or subregion MER will take place once the state-wide MER framework is finalised. Currently there is no funding for sub-regional MER

- In the past NRM investment decisions were linked to MER. For example, the Blackwood NRM plan ‘Securing the Future’ was strongly based on MER. The zone action planning established the minimum monitoring units for the NRM prioritisation and monitoring.

### SA South Australian Murray Darling Basin Natural Resources Management Board (SA MDB NRMB)



The region that is the subject of this case study aligns broadly with the Murray-Darling Basin within the State. Specifically, the region is bounded by the barrier highway to the north, the SA Victoria and SA-NSW borders to the east, the northern boundaries of the Kingston and Tatiara district councils' areas in the south, and in the west the boundary of the Basin as far north as the northern boundary of the Hundred of Hardy in the District Council of Peterborough.

The region also includes the coastline adjacent to the Murray

Mouth and Coorong, and marine environment to the extent of State waters (3 miles offshore).

The landscape of the region ranges from the low lying coastal plains of the Coorong to the flat, expanse of the Mallee to the steeper slopes of the Eastern Mount Lofty Ranges. The Coorong district is mainly a low lying coastal plain featuring calcareous coastal dunes and interdunal plains covered by sandy soils. The Mallee consists of expansive and relatively flat low lying plains, less than 100 metres above sea level, interspersed by sand ridges and sandhills with occasional large claypans. On the western border of the basin, the landscape rises to the Eastern Mount Lofty Ranges where it is bounded by steep escarpments.

The primary objective of the SA MDB NRMB has been to prepare a Natural Resource Management Plan and Investment Strategy for the region.

The SA MDB NRMB is comprised of representatives from the River Murray Catchment Water Management Board, the Murray-Darling Basin Ministerial Council's Community Advisory Committee, local government, soil conservation boards, local action planning committees, indigenous groups and State government agencies.

In implementing the plan, the SA MDB NRMB plays a key role in advocacy and negotiation with State and Commonwealth governments in the interest of the region and its natural resources.

To achieve this objective the SA MDB NRMB partners projects with other NRM Boards in the State, sharing knowledge, experience and resources.

The NRM Plan conforms to and supports the federal, state and basin-wide policy framework for managing natural resources and was developed from the wealth of experience within the SA portion of the MDB and plans that already exist.

#### *Nature of reporting*

In 2003, the Performance Assessment and Reporting System (PARS) was designed to measure the overall catchment health of the South Australian Murray Darling Basin (SA MDB). It was established in 1988 by the South Australian CARE Committee Inc (SACC) and the River Murray Catchment Management Board (RMCWMB). In 1999-2000 a suite of 20 indicators was selected.

The indicators cover the river, the irrigated areas, the dryland farming areas, threatened species, pests, native vegetation and revegetation, ongoing education and priority setting.

The PARS has been disbanded and is soon to be updated by a new catchment condition report to be developed by mid 2006.

The new catchment condition report will be based on 26 Resource Condition Targets (RCTs) that have been developed. For each RCT, progress towards the target has been documented in the form of a report card. Each report card illustrates the following:

1. Benchmark data (baseline or point of time).
2. Long term trend (no available trend, downward trend, stable, positive trend or target met or exceeded).
3. Reporting period (no investment, program not initiated, insufficient evidence to assess, evidence of regress, evidence of no progress, evidence of progress, evidence of target achieved or exceeded).

#### *Critical findings*

- The resource condition report will be a comprehensive tool to show progress towards the INRM plan.
- The report is supported by 26 report cards. These report cards are based upon very comprehensive data and knowledge in the region.
- The resource condition report will be used as a tool to engage existing community groups and initiate community groups in certain areas to enhance the collection of monitoring data.

## International Case Studies

### Fraser Basin (FBC) B.C. Canada

The Fraser Basin covers an area stretching 1377km<sup>2</sup> from the Rockies to Richmond. The Basin covers more than 25% of British Columbia. The area includes the townships and cities of Prince George, Vanderhoof, Quesnel, Williams Lake, Kamloops, Lillooet, Chilliwack, Abbotsford, Surrey, Delta, Coquitlam, Vancouver, Whistler and many others located in the Fraser Basin. It covers a diverse area throughout British Columbia and accommodates a broad range of industries including some of Canada's largest natural resource based industries. The industries and activities are typical of major metropolitan areas, including residential and commercial construction, retailing, services as well as major industries based on direct use of natural resources. Other major industries include tourism, logging and the forestry industry, fishing, agriculture, mining and manufacturing.



The Fraser Basin Council was established in 1997 as a unique non-governmental, not-for-profit, non-partisan organisation. It consists of a collaboration of community groups, NGOs, businesses and four levels of the Canadian government. The FBC has a strong history of environmental awareness with a particularly strong focus on outdoor recreation and tourism. The Council developed a Charter for Sustainability that has become the main overarching plan for achieving sustainability including sustainable NRM in the region.

The Charter for Sustainability provides a vision and outlines four strategic directions for its activities. Each direction features goals and suggestions on how those goals can be achieved. The goals are; Understanding Sustainability, Caring for Ecosystems, Strengthening Communities and Improving Decision-Making.

#### *Nature of reporting*

The FBC have developed a report card system that has been adopted in the form of the 'Snapshot Report'. The Report is produced biannually and provides 17 sustainable performance indicators. The report is produced in the form of a 'Broad Sheet paper' that is then distributed throughout the region to provide a report on a simplified suite of triple bottom line indicators. The FBC also produce program specific reporting that is distributed to stakeholders and made available on the FBC Website.

The 'Snapshot on Sustainability Report' provides an overview in an easy to understand format. The report allows a reader to simply identify information on all of the 17 sustainability indicators and provides information that is easily defined and allows the reader to identify trends, both good and bad within the reporting indicators.

*Critical findings*

- Due to the vast size of the Fraser Basin and the unique regional interests and characteristics, the FBC has divided the Fraser Basin into five regions. Each FBC region is represented by three or more directors on the Board, and each is supported by a staff regional manager working out of a regional office.
- The sustainability indicators developed by the FBC to report on the overall health of the region cover a diverse range of socio-economic and environmental issues. The FBC are committed to continually improving their reporting and monitoring. An additional four Sustainability Indicators have been added since the original 'A Snapshot on Sustainability Report.'
- The FBC play an active role in a broad range of planning policy and decision making within the region. Much of the ongoing work of the FBC involves developing partnerships with all levels of government and stakeholders within the community.
- The FBC play an active role in carrying out research and providing information that influences planning and public and private investment.
- Over time the FBC has become better at engaging the media and now use them as an important tool in raising awareness of key issues. The FBC have formed a partnership with a major Canadian newspaper that currently financially supports the FBC's biennial conference.
- The FBC currently feed into Canada's SoE reporting on 'Freshwater Ecosystems'. However there are currently only a handful of environmental indicators monitored on a national scale.
- The FBC rely on private and federal agencies to provide the data that is then used within the SoE reports. However the FBC do carry out research to meet the requirements of ongoing regional needs.
- The FBC relies on funding from the private sector, NGOs and three levels of government. Their core budget is funded by the government, including a 20c per capita levy collected through local government. Provincial government provides a single lump sum and the federal government provides funding through several departments. The FBC also plays an active role in raising funds for specific projects.
- The FBC funding is performance based, it varies from year to year, and is dependent on the council being seen as a creditable, impartial facilitator.
- FBC has been successful in bringing together influential people. It currently has 36 directors consisting of elected representatives from local and first nations and senior staff of provincial and federal agencies. Its increasing credibility means that prominent people want to be on the board and generally involved in their programs.
- The FBC is a unique organisation that to date has not been replicated in any other regions within Canada.

- The FBC is a forum for generating consensus around sustainable development issues; it heavily relies on collaboration and cooperation. It has developed a reputation for fair and impartial reporting on key indicators for sustainability development.

### Auckland Regional Council (ARC) New Zealand

The Auckland Region in the North Island of New Zealand is a large area that takes in the Rodney District, North Shore City, Waitakere City, Auckland City, Manukau City, Papakura District and Franklin District Councils. Auckland is New Zealand's largest city and has all industries associated with a large commercial and industrial city, including manufacturing, trade, transport, retailing, education and other service industries. Intensive agriculture, grazing and forestry are major land uses, with over 65% of agricultural land utilised for pastoral activities.



The ARC is one of 15 regional councils established under the Resource Management Act (RMA), with the principle purpose of integrated planning, NRM and sustainable development. The former catchment authority and regional water board was established in 1967 to administer the water and soil conservation act.

Regional Policy Statements are required by the RMA as high level strategic plans for the regions. The ARC's Regional Policy Statement is the high level policy

for the region's future, supported by a range of regional statutory plans (inland waters plan, rural waste plans, the sediment control plan) and non statutory plans such as the urban growth strategy. Regional statutory plans are binding on all other authorities including district councils (district authority equivalent to Australian local governments) and the private sector. All district councils must develop plans and policies that are consistent with the regional plans. The Air, Land and Water Regional Plan provides an overview of the initiatives and projects to be carried out as a way of implementing the ARC's statutory functions in relation to environmental issues of high importance. It will be formerly evaluated in ten years.

#### *Nature of reporting*

Under the RMA the ARC is required to monitor the environment and the effectiveness of policies. It has adopted a SoE reporting approach. The reporting covers an extensive array of measurable parameters including social economic and environmental indicators, including: ambient air quality; surface freshwater quality and quantity; freshwater ecology; groundwater quality and quantity; geothermal water quality and quantity; saline water quality and ecology; terrestrial ecosystems; geological features; natural hazards; land use patterns; analysis of social and economic trends (population, GDP); and whether tangata whenua (Maori custodianship) issues and concerns are being recognised.

The SoE Monitoring program is used as a tool to report on the progress and the suitability of the plan. The SoE Monitoring Report evaluates if the plans are fulfilling the aims of the RMA and provides an overview of achievements and shortfalls. The evaluation is an ongoing process, with formal evaluations undertaken periodically. The ARC has developed a Statutory Policy Effectiveness Monitoring Program (SPEMP) in order to evaluate the effectiveness of operative Statutory RMA policy documents. The SPEMP involves a five step process, broadly as follows: (1) Setting monitoring objectives, (2) Identifying what to monitor, (3) Developing indicators, (4) Collecting, analysing and presenting data followed and (5) Subsequent review of the statutory document.

The program is based on data gathered through the SoE monitoring program, but involves targeting indicators and processing information to separate the effect of the objectives, policies and methods in achieving environmental outcomes. The program is used to evaluate the effectiveness of policies and activities in achieving environmental results.

### *Critical findings*

Monitoring environmental conditions and the effectiveness of policies is a statutory requirement under Section 35 of the RMA. Regional councils are required to collect and keep representative data on natural resources and the environment in their region. The ARC identifies major issues and answers typical SoE questions based on the PSR model. Every five years a major State of the Region report is prepared and released.

Due to the integrated nature of the legislated arrangements the MER used by the ARC is used for planning, policy development, delivery and regional decision making. SoE tends to provide information which is representative of issues in the regions and feeds into policy in a general sense. Development options are tested through computer modelling which superimposes various series of scenarios of different intensities of land development in different parts of the estuaries' catchments. The scenarios link land runoff models and estuary hydrodynamic models and the data generated by their ecological monitoring program.

The outputs of the planning are the establishment of environmental risk profiles. The lowest environmental risk sites are adopted and implemented by the planning authorities for various suitable forms of land development. The environmental risk assessment of different land development scenarios is critical at determining land use determinations and future land use. The monitoring has provided strong confirmation of the predictive capacity of the model especially regarding sediments effects and urban contaminants.

This form of adaptive management linking modelling, monitoring and policy, planning and practice is both scientifically robust and legally defensible under the planning laws established by the RMA. It is accepted that the science (including the science based monitoring) is fundamental to support NRM and planning decisions. It has been in use since 1995 and has been tested in several court determinations regarding disputed planning decisions on land development.

Legal test cases have established the credibility of the monitoring and modelling used. Therefore it could be argued that the RMA reforms have lead to a functioning system that links NRM, planning, the legal system and MER.

The RMA simplified legislation and process to establish a systematic framework for ensuring that there is a strong and functioning policy - science interrelationship.

The new air, land, water management plan is based heavily on the science and the science is continuously being refined and confirmed by environmental monitoring. Monitoring is focused on trend assessment and credible longitudinal studies. Data is used for trend assessment and all specifications for monitoring must meet certain prescribed trend power. The monitoring systems are subject to continuous refinement. All programs are submitted for independent peer review every five years: are the management questions relevant? Is the monitoring useful? Is the approach relevant and appropriate? Is it cost effective?

Socio-economic information is integrated via policy and planning mechanisms which in effect are a set of cascading statutory plans which have the roles and relationships specified under the RMA. The RMA is complex but provides framework for actively protecting the natural environment and for integrating planning, NRM and environment protection.

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## International

### **Canada - Fraser Basin Council (FBC)**

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### **New Zealand – Auckland Regional Council (ARC)**

Chris Hatton

# Appendices

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# **Appendix A**

## **Detailed Case Studies**

Appendix A has been bound as a separate attachment to this report.

# Appendix B

## Evaluation Criteria

	CONTEXTUAL INFORMATION	SOURCED AND PRESENTED AS:
1	What is the name of region	NHT or NAP regional name
2	What is the geographic extent of the region.	Map plus text – eg reference to NLWRA Atlas
3	What major NRM plans and strategies have been developed and what are the priority NRM issues in the region.	Reference to NRM plans Reference to NLWRA Atlas
4	What is the nature and history of the organisation/s	CMA, regional coalition such as Moreton Bays waterways and catchments partnership
5	What are the major industries including NRM based industries in the region	ABS
6	Describe the demographic profile of the region	BRS social atlas, ABS stats
7	Describe the economic profile of the region	State of the regions reports - NIEIR
8	Describe the type and frequency of reporting undertaken	Regional reports
9	Describe the environmental and NRM performance monitoring systems adopted	
10	Describe the types of indicators used (including social, economic and environmental)	

	<b>QUALITATIVE CRITERIA</b>	<b>SOURCED AND PRESENTED AS:</b>
1	What was the main aim of the reporting at the outset and in your view have you achieved what you set out to achieve	
2	Does the reporting support effective planning, policy development and regional decision making	Consultations, document review, analysis, targeted interviews
3	Is the reporting linked to NRM planning and investment decisions	Consultations, document review, analysis, targeted interviews
4	Has the reporting been effective in terms of community engagement	Consultations, document review, analysis, targeted interviews
5	Is the reporting used for longitudinal studies and trend assessments  How is actual resource condition and trend being assessed  How are standards and protocols set and reported, information coordinated and analysed  How is the assessment of resource condition and trend being inputted into adaptive management	Consultations, document review, analysis, targeted interviews
5a	What analysis was carried out to assess effectiveness or cost benefit of proposed management strategies in terms of resource outcomes	
6	Is the reporting useful for refining monitoring systems and focusing R&D	
7	Is the reporting aligned to reporting needs expressed by the National Monitoring and Evaluation Framework  What are the major limitations with linking to this national monitoring system	

	<b>QUALITATIVE CRITERIA</b>	<b>SOURCED AND PRESENTED AS:</b>
7a	<p>Are there State monitoring programs that could assist</p> <p>Has regional monitoring been integrated with State monitoring programs</p>	
8	<p>What are the key information or data sets used</p>	
9	<p>Are there any key information sets that are common to each of the regions being evaluated</p>	
10	<p>Can you identify any consistencies in terminology between the regions being evaluated</p>	
11	<p>Does the reporting effectively integrate socio-economic information relevant to NRM</p>	
12	<p>Other factors that have contributed to the success of the reporting:</p> <p>Is there a strong history of NRM in the region</p> <p>Was there significant funding available for the region at the time</p> <p>How would you describe the relationships between the organisations involved</p> <p>Were there or are there key influential personalities that contributed to the success</p> <p>Did any innovative research or methodologies play a pivotal role in the success</p> <p>Were there any new developments or infrastructure such as a proposed dam, salinity plan or forestry reform that was the driving force for information gathering.</p> <p>Future directions</p> <p>What has been the greatest success from the regional plan or process</p>	

	<b>QUALITATIVE CRITERIA</b>	<b>SOURCED AND PRESENTED AS:</b>
	What has been the greatest limitation of the regional plan or process	