



Progress report on effective
implementation of Catchment
Action Plans

November 2008



Progress report on
effective implementation of
Catchment Action Plans

NOVEMBER 2008

Enquiries

Enquiries about this report should be directed to:

Bryce Wilde

Phone (02) 8227 4318

E-mail bryce.wilde@nrc.nsw.gov.au

Postal address GPO Box 4206, Sydney NSW 2001

List of acronyms

CAP	Catchment Action Plan
CMA	Catchment Management Authority
DECC	Department of Environment and Climate Change
DPI	Department of Primary Industries
LEP	Local Environmental Plan
LMD	Land Management Database
MER	Monitoring, Evaluation and Reporting
NAP	National Action Plan for Salinity and Water Quality
NHT	Natural Heritage Trust
NRC	Natural Resources Commission
NRM	Natural Resource Management
NSW	New South Wales

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism and review. Selected passages, table or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

Document No. D08/5192

ISBN: 978 1 921050 38 1

Table of Contents

1	Introduction and executive summary	2
1.1	The regional model for NRM is paying dividends	3
1.2	The CMAs are effectively implementing CAPs	4
1.3	Addressing barriers to effective CAP implementation	5
1.4	Structure of this report	8
2	Managing natural resources in NSW	9
2.1	Ending broad scale clearing and setting targets	9
2.2	Whole-of-government delivery of state-wide targets	11
2.3	Rationale for a regional NRM delivery model	13
2.4	Building on the continuity of the model	14
3	CMAs are effectively implementing CAPs	15
3.1	NRC's audits of CAP implementation	15
3.2	CMA successes in engaging their communities	16
3.3	CMA successes in delivering on-ground results	17
4	Prioritising investments to achieve sustained landscape improvement	20
4.1	CMA approaches to investment prioritisation	20
4.2	Investors' funding requirements	21
4.3	Spatial prioritisation at the state scale	23
5	Ensuring data is used to inform policy and investment decisions	24
5.1	The state-wide MER Strategy	24
5.2	Variable progress in CMAs' MER	26
5.3	Adaptive management in CMAs	27
6	Clarifying roles and accountabilities	29
6.1	Roles and accountabilities in the regional model	29
6.2	Performance of CMA Boards	31
6.3	Arrangements for delivery of CMA support services	31
7	Ensuring whole-of-government and community support for CAP implementation	33
7.1	Developing whole-of-government and community ownership of CAPs	33
7.2	Aligning NRM-related policies and programs	34

1 Introduction and executive summary

With eighty-nine percent of NSW land privately managed¹, the health of our diverse natural landscapes depends on voluntary private stewardship of environmental assets. The NSW Government has recognised this and created a regional model for natural resource management (NRM) to help ensure healthy rivers, productive soils, diverse native species and thriving communities throughout our state. This is an ambitious and long term reform agenda.

Community-based action is central to the regional model. The NSW Government created 13 Catchment Management Authorities (CMAs) to improve the health of natural resources in line with government policy and legislation by building community support, trust and capacity to sustainably manage natural resources.

Each of the CMAs is responsible for developing a Catchment Action Plan (CAP) in partnership with its community and government agencies. These regional plans are intended to drive and integrate community and government investment and action in NRM. They are a primary mechanism for delivering on the State Plan's Priority E4 (which sets out the state-wide targets for water, land, biodiversity and community)² and to realise the state's aspirational goal of resilient landscapes. It is vital that CAPs are implemented as effectively as possible so the limited funds available for NRM in NSW generate multiple benefits and make maximum progress towards the state-wide targets.

Other key players in the regional model include the Department of Environment and Climate Change (DECC) as lead policy agency, other NRM agencies such as the Departments of Planning, Primary Industries and Water and Energy, local government, the Natural Resources Advisory Council and the Natural Resources Commission (NRC).

The NRC is responsible for auditing the implementation of the whole of community and government CAPs. The NRC is required to report on the effectiveness of CAP implementation in terms of progress in achieving compliance with the state's *Standard for Quality Natural Resource Management*³ (the Standard) and meeting the state-wide targets.⁴

This report draws largely on the findings of the NRC's first seven audits.⁵ The audits focused on the activities of the CMAs in implementing the CAPs; particularly on how effectively they are applying the Standard in prioritising their investments in NRM, delivering projects that contribute to improved landscape function, engaging their communities and using adaptive management. The seven audits conducted to date are a good sample from which the NRC can make an informed assessment on the progress across NSW.

¹ Freehold and leasehold, AUSLIG land tenure database 1993. NSW has a total of 801.6 thousand square kilometres of land of which approximately 50.6% is private freehold title, 38.5% is crown leasehold managed privately and 10.7% is public land.

² NSW Government 2006, *The State Plan: A New Direction for NSW*. Priority E4: Better outcomes for native vegetation, biodiversity, land, rivers and coastal waterways.

³ Natural Resources Commission 2005, *Standard for Quality Natural Resource Management*, September.

⁴ Under Section 15 (2) (b) of the *Natural Resources Commission Act 2003*. "The Commission is to provide the Minister with annual reports on its work and activities, including on: (b) the progress in achieving compliance with State-wide standards and targets adopted by the Government, including the effectiveness of the implementation of catchment action plans in achieving compliance with those standards and targets."

⁵ In 2008, the NRC audited the following seven CMAs: Border Rivers Gwydir, Central West, Hawkesbury-Nepean, Hunter-Central Rivers, Lower Murray Darling, Murray and Western.

The regional model is well established. The NRC audits found that the CMAs are effectively implementing the CAPs; however, both CMAs and CAPs are still at a relatively early stage of development. NSW needs to support continual improvement of CAP implementation and CMA performance by addressing the issues that reduce their effectiveness and efficiency and thus our chances of achieving resilient landscapes across NSW.

1.1 The regional model for NRM is paying dividends

The NRC's audits indicate that the regional model for NRM is well established and most of the key elements are in place leading to improved NRM. For example:

- the *Native Vegetation Act 2003* is in force and has effectively halted broad scale clearing of native vegetation in the areas covered by the Act
- the CMAs have been established for four years and are implementing quality CAPs that set out their regions' investment priorities for the next ten years
- the NSW Government has a state-wide aspirational goal and thirteen state-wide targets. It has incorporated the targets into the State Plan and made all government agencies responsible for meeting them, and
- the NSW Government has adopted the Standard as its tool for assuring consistently high-quality NRM across the state. The CMAs are using it to guide them in developing and implementing CAPs. The NRC is using the Standard to independently audit the quality and implementation of CAPs.

Under the regional model, the CMAs facilitate alignment between their communities' values and actions and government policies and programs. A key part of the CMAs' role is to engage with their communities, gain their trust, build their ownership of the regional CAP and targets and then 'help them to help themselves' by voluntarily adopting sound NRM practices and acting as stewards of the natural resource assets on their land. CMAs are responsible for planning and implementing CAPs in partnership with government, local government, non-government organisations, industry, community groups and individuals.

NRM is a long-term process and maintaining the community's trust and ownership requires long-term continuity in the state's model and funding for NRM.⁶ Given this, the NRC believes a major threat to achieving the state-wide targets is a retreat from (or perceived retreat from) the regional model.

The funding arrangements that support the model are changing. The Australian Government has introduced a new program, *Caring for our Country*, which allows a wider variety of organisations to apply for NRM funding and takes a step away from the regional approach established under the previous funding programs.⁷ While there is still a role for CMAs, they will compete with other groups for funds to deliver on defined national priorities. The NRC

⁶ See for instance: Marshall, G 2008, *Community-based Regional Delivery of Natural Resource Management – Building System-wide Capacities to Motivate Voluntary Farmer Adoption of Conservation Practices*. RIRDC Publication No 08/175; Keogh, K, Chant, D & Frazer, B 2008, *Review arrangements for regional delivery of natural resource management programmes: Final report*. Ministerial Reference Group for Future NRM Programme Delivery, Departments of Agriculture, Fisheries and Forestry and Environment and Heritage, Canberra; Lane, M 2006, *Critical issues in regional natural resource management*. Paper prepared for Australian SOE Committee.

⁷ The *National Action Plan for Salinity and Water Quality* and Phase Two of the *Natural Heritage Trust* were the major funding programs, delivered jointly with state governments from 2003-04 to 2007-08.

notes that the NSW Government has established the *Catchment Action NSW* program to fund CMAs from 2008-09 to 2012-13. The NSW government needs to determine how this program will operate in the context of the *Caring for our Country* program.

Overall, the NRC considers the strength of community engagement and the quality of the on-ground projects being delivered in NSW is very encouraging. The NSW Government should continue to fund CMAs as one of the key elements in the regional model for delivering NRM in NSW and continue to support the implementation of CAPs as a primary mechanism for meeting the state-wide targets.

Recommendation 1:

The NSW Government maintains the structure of the regional model, continues to invest in it and advocates its value to the Australian Government.

1.2 The CMAs are effectively implementing CAPs

The audits indicate that CMAs are implementing CAPs in a way that achieves appropriate compliance with the Standard, given their relatively early stage of development.

In particular, CMAs are effectively engaging their communities to understand what is most important to them and build their trust and willingness to work with the CMA in delivering projects to improve landscape function. Crucially, CMAs are effectively engaging private landholders who must be on-side if NSW is to achieve the state-wide targets for NRM.

The CMAs are also effectively delivering projects that contribute (or are likely to contribute) to improved landscape function. The NRC reviewed fifty-nine projects as part of its audits and found that:

- around ninety percent of the projects had a strong logical link between the activities undertaken and the expected long-term outcomes
- around ninety percent had already achieved their expected short-term outputs (for example the planting of native vegetation in a specific riparian zone or the fencing of conservation areas to keep stock out)
- for around fifty percent of the projects, there was evidence to suggest the projects were already leading to local improvements in resource condition, despite the ongoing drought conditions and the short timeframe, and
- around fifty percent of the projects had outputs that were likely to contribute to improved landscape function.

The NRC audits also found the types of projects CMAs are delivering varies widely between regions. This is appropriate and indicates that CMAs are identifying projects that respond to the NRM threats and opportunities in their regions and communities.

The NRC identified several areas where individual CMAs could improve their performance in implementing CAPs. These CMA-specific actions are being finalised with each CMA Board.

Recommendation 2:

The Minister for Climate Change and Environment requires each CMA Board to oversee effective implementation of the suggested actions in the NRC's audit reports.

1.3 Addressing barriers to effective CAP implementation

While the NRC is confident CMAs are effectively implementing whole of community and government CAPs, both are still at a relatively early stage of development. It is important to continue to improve on CAP implementation and CMA performance by addressing issues that reduce their effectiveness and efficiency. The NRC's audits identified several areas for improvement. In particular, the NRC believes it is necessary to:

- improve the ability of CMAs to prioritise investments so the limited funds available make the greatest possible contribution to the state-wide targets
- ensure that resource condition data is accessible to natural resource managers to inform policy and investment decisions, enable effective monitoring and evaluation and facilitate adaptive management
- clarify the roles and accountabilities within the regional model to improve efficiency of CAP implementation, and
- ensure whole-of-government support for CAP implementation and to better align NRM-related policies and programs to promote integrated planning and action to achieve the state-wide targets.

1.3.1 Prioritising investments to achieve sustained landscape improvement

CMAs have limited budgets to invest in on-ground projects that improve NRM across their region and help achieve the state-wide targets. It is important they prioritise their investments and expend their budgets to deliver outcomes that make the greatest possible contribution to the state-wide targets.

The NRC's audits found that CMAs' effectiveness in prioritising their investments is inconsistent. For example, few audited CMAs are consistently prioritising projects that provide multiple NRM benefits, as required by the Standard. Rather, they more commonly take a 'siloed' approach, which means they direct their investments to improving specific aspects of the landscape (such as native vegetation or soil) without systematically considering the potential to generate multiple benefits across the landscape. As a result, their investments may not be making the greatest possible contribution to the state-wide targets.

The NRC audits found that despite considerable investment by DECC in developing decision-support tools only a few CMAs were using them. In addition, funding for further development, roll out and support of these tools has been exhausted. Developing appropriate decision-support tools and then assisting CMAs to use them would help CMAs to prioritise investment more easily and effectively.

In addition, good investment prioritisation has been undermined by government reporting and funding arrangements. The current reporting framework does not encourage integrated catchment management. Also, CMAs do not have sufficient flexibility to expend their investment funds in the most effective and efficient way. For example, the audits identified several instances where the need for a CMA to strictly adhere to its annual investment spending budget resulted in investments that were less likely to be effective (that is, not suited to local climatic conditions or not likely to achieve sustained results) and were less efficient (that is, achieved lower contributions from landholders than other projects).

The NRC has prepared a separate report from each audit that identifies the actions each CMA should take to improve its investment prioritisation system. However, there is also need for government action. The NSW Government should improve the reporting framework to promote integrated catchment management that generates multiple NRM benefits. The NSW Government should also review the timing of funding programs to provide CMAs with more flexibility to expend their investment budgets in the most effective and efficient way.

Recommendation 3:

The NSW Government better supports CMAs to prioritise their investments and therefore maximise landscape benefits from limited budgets.

1.3.2 Ensuring data is used to inform policy and investment decisions

To effectively implement CAPs, NRM decision-makers need ready access to reliable resource condition data that is suited to their purpose. These data are essential to inform investment decisions at different scales, evaluate the success of projects in achieving CAP targets and drive continuous improvement through adaptive management in compliance with the Standard.

NSW has a state-wide Monitoring Evaluation and Reporting (MER) Strategy and significant progress has been made in implementing it and establishing monitoring programs at the regional and state level. However, resource condition information, particularly baseline data, remains difficult to access and there are no available protocols for how the data could be used. This is preventing CMAs and other CAP stakeholders from making the best decisions about the timing, place and nature of specific activities. It also undermines the CMAs' ability to monitor and evaluate their projects and to manage adaptively.

The inaccessibility of resource condition data has prevented the NRC from accurately assessing NSW's progress towards the state-wide targets to date and the CMAs' contribution to that progress. This undermines the government's ability to assess whether its investments in NRM are adequate to achieve the targets.

Recommendation 4:

The NSW Government independently reviews implementation of the MER Strategy with a view to improving and accelerating its progress.

1.3.3 Clarifying roles and accountabilities

The NRC's audits found that the roles and accountabilities within the regional model are not sufficiently clear or aligned for CMAs to effectively and efficiently implement CAPs.

Confusion about the lines of accountability between CMA General Managers, CMA Boards, DECC and the Minister for Climate Change and the Environment is a particular concern.

The audits also found that while CMAs' governance arrangements are fairly strong for this stage in their development, the performance of CMA Boards is mixed. Some have well-documented management controls, transparent decision-making systems and are clear on their decision-making authority and accountabilities. Others are struggling to meet their accountability requirements and are not as effective in building wide community trust and partnerships with other organisations.

In addition, the current arrangements for delivering support services to CMAs are causing inefficiencies and frustration. CMAs are not satisfied with services provided by government agencies; yet feel they have no practical way to improve them.

Recommendation 5:

The NSW Government clarifies roles and accountabilities within the regional model.

1.3.4 Ensuring whole-of-government and community support for CAP implementation

The NRC's audits found that the NRM policy environment is not sufficiently integrated for CMAs to implement CAPs effectively. CMAs are responsible for improving NRM in their regions but have limited ability to do this on their own. CMAs need whole-of-government support to integrate the NRM components of other government plans and CAPs.

In addition, NSW and Australian Government policies and programs are not aligned and their objectives sometimes conflict with each other. This leads to inefficiencies and tension between NRM agencies and sends mixed messages to the community, undermining the credibility of the CMAs.

For example, the NSW land use and NRM planning processes and legislation do not have common objectives, nor do they adequately incorporate analysis of landscape function and value in their decision frameworks. This presents a major risk to CAP implementation, particularly on the coast, as it means the CMAs' attempts to achieve their catchment-level targets and thus contribute to the state-wide targets for NRM can be undermined by land use zoning and development decisions.

To be effective, all relevant policies need to share a common view of the landscape functions provided by our natural assets and where development can best be accommodated to preserve the values of those assets, such as healthy rivers, clean beaches, diverse native species and economic and social amenity.

The NRC audits found there are a number of improvements that can be made to the next generation of CAPs. These improvements will help to build a broader sense of ownership across governments and the community to overcome constraints imposed by overlapping roles, responsibilities and actions of the various stakeholders in NRM.

In the NRC's view, the NSW Government is not maximising the benefits from its NRM investments because it often focuses on single, not multiple outcomes and not all NRM agencies demonstrate clear commitment to approved CAPs and the state-wide targets.

Recommendation 6:

The NSW Government adopts a landscape approach across NRM and planning legislation, policy and programs, based on the principle of improving or maintaining resource condition, as required by the state-wide targets.

1.4 Structure of this report

The following chapters explain the NRC's findings and recommendations in more detail:

- Chapter 2 provides an overview of the NSW Government's goals for NRM, the regional model for achieving those goals and the NRC's view of progress to date
- Chapter 3 explains the NRC's finding that CMAs are effectively implementing CAPs, given their current stage of development
- Chapter 4 focuses on the need to improve the prioritisation and effectiveness of CMA investments so the limited funds available make the greatest possible contribution to the state-wide targets
- Chapter 5 discusses the need to ensure resource condition data is readily accessible to inform decision-making, enable effective monitoring and evaluation and facilitate adaptive management
- Chapter 6 explains why there is a need to clarify the roles and accountabilities within the regional model to improve the efficiency and effectiveness of CAP implementation, and
- Chapter 7 looks at the need to ensure whole-of-government support for CAP implementation and to better align NRM-related policies and programs to promote integrated planning and action to achieve the state-wide targets.

2 Managing natural resources in NSW

Effective natural resource management requires both public and private land managers to manage their parts of the landscape for the benefit of everyone. The values that we derive from our landscapes, including the supply of clean water, productive soils, species diversity and thriving communities, are provided by natural systems. Many of these systems, such as rivers and vegetated landscapes, are under pressure from human activities such as intensive agriculture, mining and peri-urban development, as well as climate change and extended drought.

As 89% of land in NSW is managed by private landholders⁸, NRM policy responses must include a significant focus on supporting voluntary stewardship. The actions required for managing the natural resource assets on private land must be taken locally, but the benefits are far reaching. Much of NRM is about helping landholders and other community groups to help themselves; to work with the landscape, supporting it so it can support their needs now and society's needs in the long term. This voluntary participation and on-ground action can be supported by state and national legislation, policies and programs, but the most effective mechanisms for co-opting voluntary action is at the local or regional level.⁹

In 2003, the NSW Government implemented reforms to improve its approach to NRM and encourage voluntary stewardship through regional support. A key part of that new approach was the regional NRM delivery model. This model was strongly supported by the Australian Government, who jointly funded the states' NRM programs. All states adopted a version of a regional model. However, the Australian Government now appears to be partially moving away from the regional model through its introduction of a new NRM funding program, *Caring for our Country*.¹⁰

The following sections explain:

- the key elements of the regional model of NRM in NSW and its achievements
- why a regional model remains the most appropriate approach for delivering NRM, and
- the need for the NSW Government to continue to support this approach.

2.1 Ending broad scale clearing and setting targets

In 2005, the NSW Government adopted a goal for all natural resource managers to aspire to: creating resilient landscapes.¹¹ This means creating landscapes that are healthy, productive and can cope with change. This concept is captured in a state-wide aspirational goal:

*“Resilient, ecologically sustainable landscapes functioning effectively at all scales and supporting the environmental, economic, social and cultural values of communities”.*¹²

⁸ As per footnote 1.

⁹ As per footnote 6.

¹⁰ As per footnote 7.

¹¹ Natural Resources Commission 2005, *Recommendations: State-wide Standard and Targets*, September.

¹² *ibid.*

This aspirational goal recognises people and communities as a part of the landscape and is the yardstick against which all NRM activity should be assessed. Achieving resilient landscapes is a long-term and complex undertaking.

The NSW Government's first step towards this goal was to end broad scale clearing of native vegetation, which has been successful. Broad scale clearing has been effectively halted in the non-urban areas of NSW covered by the *Native Vegetation Act 2003*. This has been achieved through implementation of clear regulations and the CMAs' actions as the community interface. CMAs are helping to change landholder attitudes to native vegetation and clearing over time.

Once broad scale land clearing was halted, the next step was to set specific state-wide targets requiring natural resource managers to repair past degradation and improve the condition of all natural resource assets. In 2005 the government adopted thirteen state-wide targets for NRM and recommitted to them in 2006 as Priority E4 of the State Plan. These targets break down the aspirational goal into more immediate and measureable 'steps'. If NSW is progressing well against these targets, we can be confident that our landscapes and communities are becoming more resilient. The targets are listed in Table 1.

Table 1: State-wide targets for natural resource management

Biodiversity	<ol style="list-style-type: none"> 1. By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition 2. By 2015 there is an increase in the number of sustainable populations of a range of native fauna species 3. By 2015 there is an increase in the recovery of threatened species, populations and ecological communities 4. By 2015 there is a reduction in the impact of invasive species
Water	<ol style="list-style-type: none"> 5. By 2015 there is an improvement in the condition of riverine ecosystems 6. By 2015 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses 7. By 2015 there is no decline in the condition of marine waters and ecosystems 8. By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained 9. By 2015 there is an improvement in the condition of estuaries and coastal lake ecosystems
Land	<ol style="list-style-type: none"> 10. By 2015 there is an improvement in soil condition 11. By 2015 there is an increase in the area of land that is managed within its capability
Community	<ol style="list-style-type: none"> 12. Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being 13. There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management

2.2 Whole-of-government delivery of state-wide targets

Building community capacity is necessary to complement the policy of halting land clearing and setting targets to sustainably manage biodiversity, land and water resources into the future.

The NSW Government embarked on an institutional reform process in 2003, a key feature of which is a network of thirteen regional bodies or CMAs. In jointly proposing the *Natural Resources Commission Bill*, *Catchment Management Authorities Bill* and *Native Vegetation Bill*, the NSW Government intended the package of reforms to:

“deliver what the community wants: real environmental improvements that are recognisable and measurable and above all acknowledged by the communities that did the work to make them happen; and greater involvement of the people of regional New South Wales in the management of their landscapes”.¹³

These reforms were designed to enable integrated management of all natural resources. This means managing water, biodiversity, land and community values together, recognising the interconnectedness of ecological systems and the links between economic activity and environmental health. Devolving decision-making and investment responsibilities to the regional or catchment level was intended to lead to greater local autonomy, greater trust between organisations and individuals, solutions better tailored to local conditions and long-term community ownership of improving landscapes.

While NRM involves harnessing voluntary participation, it also involves other players including Australian and NSW Government Ministers, all levels of government and community groups. The key NRM roles and responsibilities within NSW are as follows:

- state government agencies (including DECC, Department of Primary Industries (DPI) and the Departments of Water and Energy, Lands and Planning) are responsible for policy and legislation, providing technical and scientific expertise, implementing monitoring, evaluation and reporting and enforcing regulation
- CMAs are responsible for working with their communities to build a strategic plan, a Catchment Action Plan (CAP) and to use this plan to invest in NRM in partnership with their communities
- the Natural Resources Advisory Council is responsible for articulating the positions of key stakeholders to the government at the state scale, and
- the NRC is responsible for recommending standards and targets, recommending CAPs and auditing how effectively CAPs are implemented.

To support this institutional reform, NSW has implemented a planning and accountability framework which is leading the way in Australian NRM:

- the state-wide targets set the goals for everyone to aim for and allow government to track progress
- the *Standard for Quality Natural Resource Management* describes good practice for NRM, defining a measure for continuous improvement in how we go about the business of NRM to deliver the targets, and
- an audit process provides accountability and drives continual improvement.

¹³ Second Reading Speech for the *Native Vegetation Bill*, *Catchment Management Authorities Bill* and *Natural Resources Commission Bill*, NSW Hansard Articles: LA: 12/11/2003 #51 p. 8.

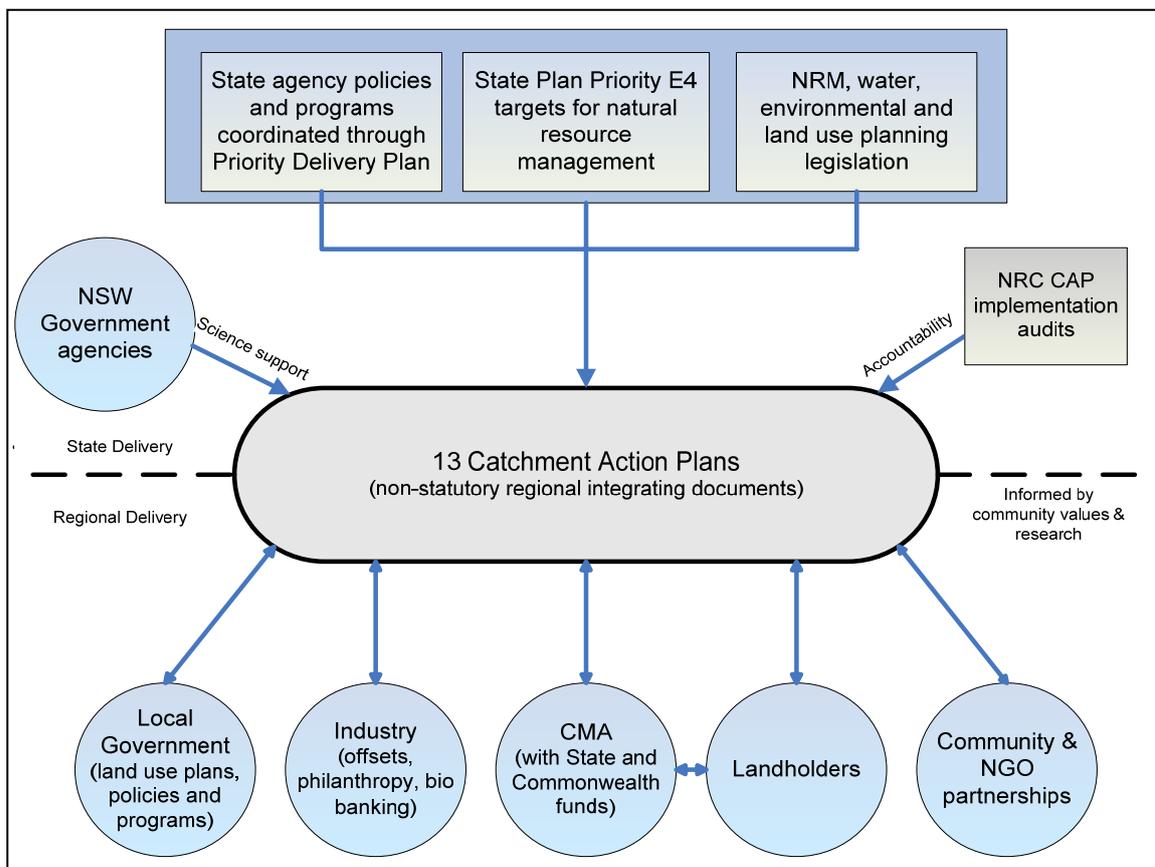
Together, these elements help government to “*know what we are trying to achieve, whose job it is to achieve it and whether we are on track to get there*”.¹⁴

In this model, CMAs are a community interface for whole-of-government NRM policy and a vehicle for consultation and engagement with community organisations and individuals. Through their investment planning, CMAs are responsible for integrating NSW and Australian Government policies and priorities to determine regionally appropriate investment priorities. They must implement CAPs in partnership with local governments, non-governmental organisations, industry and private landholders.

NSW requires sustained and coordinated action from state agencies, CMAs, local government and private industry to achieve the state-wide targets. The CAPs should be integrating plans that collectively guide the on-ground, practical implementation of all NRM policies and investment across the state towards the targets. Figure 1 depicts this model for delivering the targets.

NSW has put in place the pieces of the jigsaw puzzle. The thirteen CMAs are established; twelve of the thirteen CMAs have ten-year strategic CAPs in place; the Standard and targets are being implemented; and the auditing process has commenced. Government agencies are delivering a Cabinet-approved Priority Delivery Plan, outlining milestones for coordinated state-wide activity to deliver the targets.

Figure 1: Model for delivering the Priority E4 targets for NRM in the State Plan



¹⁴ The government has approved twelve of the thirteen CAPs. The NRC has recommended the final CAP to government.

2.3 Rationale for a regional NRM delivery model

The NRC considers that a regional model for delivering NRM remains the most appropriate and effective approach. The regional model for NRM has been adopted nationally, with each state taking a unique approach to how their regional bodies are established and supported. CMAs are the latest incarnation of community-based bodies for NRM in NSW¹⁵ and were established as independent, statutory authorities of the state government under the *Catchment Management Authorities Act 2003*.

In NSW, river catchments define the regions for decision-making and management. These regions sit between the local government and state scales. This recognises that landscapes should be managed at a scale where the natural systems operate and where CMAs can have proximity and access to their communities in order to build capacity and influence behaviours.

A regional model is appropriate to integrate the delivery of NRM policies and build community support to achieve them because:

- regionally based organisations have greater capacity to sustain trust with their communities, leading to better voluntary stewardship of the land for the long term
- regionally based organisations are better placed to interface with the many and varied local communities and community groups in each region who all must come on board to make integrated NRM a reality, and
- a regional focus is a viable scale for government policies to be integrated and harmonised to suit different conditions, yet maintain sufficient perspective and not be captured by parochial views.

NRM is too complex and difficult to manage centrally, as experience suggests.¹⁶ In addition, private landholders, whose participation is essential, are less likely to trust and support centralist directions. While there may be some administrative efficiency gains to be made from centralising control, they are likely to be overwhelmed by the loss of community support and inability of central agencies to motivate the long-term behaviour change that CMAs are beginning to drive.

A regional approach is required to motivate broad scale voluntary participation and uptake. Of course the regional approach is not without risks. However, the NSW regional model effectively addresses these risks. For example, if CMAs comply with the Standard and respond appropriately to the NRC's audit findings many of these risks will be managed.

¹⁵ The evolution of the regional model in NSW commenced with Catchment Management Committees in 1989. Catchment Management Committees eventually morphed into Catchment Management Boards in 1999 and 2000 before taking on their current form as CMAs in 2003-04.

¹⁶ This view is supported by the findings of the Australian National Audit Office (ANAO) that the regional delivery model "was supported by well designed bilateral agreements between the Australian Government and the States/Territories and a comprehensive planning and accreditation process based on the 'best available' science. Given the scale of the NRM challenge across Australia and past experiences, it was a reasonable model in the circumstances". ANAO, *Regional delivery model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality*, ANAO Audit Report No. 21 2007-08, p. 15.

2.4 Building on the continuity of the model

Despite the successes and gains made in recent years, there is some uncertainty about ongoing support for CMAs. The regional NRM model and CMAs were central to the previous federal government's NRM programs, which funded CMAs in partnership with the states through the *Natural Heritage Trust* (NHT) and the *National Action Plan* for Salinity and Water Quality (NAP) programs.

Under the new federal program, *Caring for our Country*, there is a return to a more competitive approach and unilateral investment by the Australian Government, with a greater number of investment partners eligible for funding. The program focuses on six national priorities including biodiversity and natural icons and sustainable farm practices. However, significant investment has also been earmarked for specific iconic areas (including \$200 million for the Great Barrier Reef) and to mitigate threatening processes (including \$2 million to fight cane toads). In contrast, CAPs aim for entire landscape improvement and integrated NRM.

This new approach represents a step away from community-based planning and collaborative action for landscape health. This poses significant risks to ongoing effective CAP implementation and may undermine the capacity and support of communities to address key NRM problems. This capacity has been built through significant investment by the Australian taxpayer and needs to be recognised and reinforced through coherent and consistent policy and investment focus over time.

The NSW Government has established *Catchment Action NSW* to fund CMAs from 2008-09 to 2012-13. Progress towards the State Plan targets depends on the NSW Government maintaining focus on whole of landscape investments under this new program.

It is essential that the NSW Government investment contributes to achieving the targets in CAPs as these are Cabinet approved strategic plans. CAPs should be central to the NSW Government's response to *Caring for our Country* and be the vehicle for any investments under *Catchment Action NSW*. The NSW Government may also need to use its funding to offset Australian Government funding if the latter focuses on environmental icons but does not allow CMAs to invest in the health of the broader landscapes that support them.

The NRC believes the NSW Government should continue to fund CMAs as one of the key elements in the regional NRM delivery model in NSW and continue to support the implementation of CAPs as a primary mechanism for meeting the state-wide targets.

Recommendation 1:

The NSW Government maintains the structure of the regional model, continue to invest in it and advocate its value to the Australian Government.

3 CMAs are effectively implementing CAPs

The NRC completed the audit fieldwork of seven of the thirteen CAPs during April to September 2008. The NRC's audits indicate that CMAs are effectively implementing CAPs given these organisations' relatively early stage of development.

In particular, the NRC considers the CMAs' successes in engaging their communities and the quality of the on-ground projects they are delivering is very encouraging.

The sections below discuss in more detail:

- the NRC's audits of CAP implementation
- the CMAs' successes in engaging their communities, and
- the CMAs' successes in delivering quality on-ground projects.

3.1 NRC's audits of CAP implementation

Most CMAs are now two years into implementing ten-year CAPs. While all natural resource managers contribute to CAP achievement, in this first round of audits the NRC focussed on the effectiveness of CMAs since they are the principal organisations leading CAP implementation.

The NRC identified the key things a CMA must do well to ensure its CAP is being effectively implemented and its investments are contributing to healthier landscapes.

The NRC audits examined CMA performance on:

- effective **prioritisation**, that is, ensuring its investment decisions are guided by the CAP and investments are targeted to areas in the catchment that will achieve the best possible NRM results
- effective **community engagement**, that is, ensuring processes are in place to identify and foster partnerships, leverage continued participation and build community capacity
- achieving **on-ground results**, that is, ensuring projects are credibly contributing to longer-term targets, that projects deliver their intended outcomes and that the results will last, and
- using **adaptive management** principles and practices to continually improve and become more efficient.

The audits are a part of the adaptive management cycle and are designed to provide CMAs with a focus for their ongoing improvement.

The NRC audits reviewed fifty-nine projects and specifically looked at the logic assumptions behind project design, planned outputs and intended outcomes (short to long-term), whether outputs had been achieved and whether there was evidence that outcomes had, or were likely to be achieved.

The NRC is using these audits as a sample to advise government on overall performance in CAP implementation. The results of these audits identify both actions specific for individual CMAs as well as actions for government to address some barriers that prevent effective CAP

implementation. The NRC is producing an audit report for each CMA that will contain agreed actions to improve the individual CMA's performance.

3.2 CMA successes in engaging their communities

The NRC's audits found that most CMAs had developed strong community relationships and demonstrated a good understanding of their complex communities. Crucially, they appeared to be effectively engaging private landholders in achieving the state-wide targets for NRM.

In the NRC's view, these findings alone can be seen as major achievements, given the history of institutional change¹⁷ and the initial antagonism many in the landholder community felt towards the *Native Vegetation Act 2003*. The audits found that key factors in influencing landholders' attitudes on this contentious issue were relationships between local CMA Board members or staff and individual community members.

Examples of particularly effective approaches to community engagement included:

- building trust through skilled and committed CMA staff forging long-term, 'one-on-one' relationships with landholders
- leveraging off existing networks, such as Landcare
- aligning with and promoting landholders that were 'early adopters' of new practices
- identifying community values, needs, resources and expectations through benchmarking surveys
- recognising generational transfer, by targeting school groups with educational programs and competitions
- using multimedia tools and techniques to promote CMA activities and outcomes
- working with reference groups, including local Aboriginal communities and local councils, and
- adopting engagement strategies to fit the values and profiles of diverse communities across the catchment (for example, traditional landholders, boat owners and new residents in peri-urban areas).

The NRC observed strong CMA engagement with individual landholders. CMAs argued they need to engage individual landholders to build the groundswell required to drive long-term behaviour throughout the catchments. This form of engagement can be resource intensive; however, the returns can outlast the life of the original projects.

Through community engagement and partnerships, CMAs were leveraging significant third-party investment. Every government dollar invested through CMAs attracted co-contributions, for example through cost-sharing arrangements with landholders as well as the labour of landholders and volunteers. There are even greater opportunities for CMAs to leverage investment at the institutional level, particularly through local government, which are not yet being fully utilised.

¹⁷ CMAs were established in late 2003, a particularly challenging time. New and controversial native vegetation legislation was introduced and the previous regional groups, Catchment Management Boards, had just concluded a long and difficult process to develop Catchment Blueprints.

Reliable information about the magnitude of leveraged investment is difficult to accurately collect and report. The NRC observed many examples of projects where landholders were making significant in-kind contributions by maintaining and extending the projects on their properties. Reliably quantifying those contributions is difficult but essential if the value of the regional model is to be fully appreciated.¹⁸

3.3 CMA successes in delivering on-ground results

There is strong evidence that CMAs are achieving planned project outputs for vegetation projects and that these outputs are leading to the desired resource condition change and more resilient landscapes. For example, the NRC reviewed fifty-nine projects as part of its audits¹⁹ and found that:

- around ninety percent of the projects had a strong, logical link between the activities undertaken and the expected long-term outcomes
- around ninety percent had already achieved their expected short-term outputs (for example the planting of native vegetation in a specific riparian zone or the fencing of conservation areas to keep stock out)
- for around fifty percent of the projects, there was evidence to suggest the projects were already leading to local improvements in resource condition, despite the ongoing drought conditions and the short timeframe, and
- around fifty percent of the projects had outputs that were likely to contribute to improved landscape function.

These findings give the NRC confidence that positive impacts are being achieved. The on-ground works being delivered included:

- improving river health, by clearing rivers of weeds and re-snagging
- rehabilitating riparian areas by fencing off riverbanks and establishing water points
- protecting conservation areas by fencing for stock exclusion
- improving agricultural productivity by undertaking earth works for water spreading and retention in the landscape
- improving biodiversity by the trapping, fencing and baiting of feral fauna and implementing integrated management programs for weed control, and
- encouraging community participation through incentive Property Vegetation Plans and delivery of education programs to landholders, students and the general community.

The types of projects varied widely between regions, exemplifying the fact that the state-wide targets must be tackled differently depending on the unique characteristics of regions and communities. For example, many projects in the Western catchment, which retains much of its

¹⁸ The NRC understands new financial management software has the scope to capture in-kind investment. This enhancement is very encouraging.

¹⁹ The NRC audit teams visited fifty-nine projects across the state, as shown on the map in Appendix 1. The selection of the 59 audited projects was designed to focus on materiality and risk and to find cases where investments directed at native vegetation within the biodiversity state-wide target also addressed some of the other targets: water, land and community. This was to capture landscape function benefits. For many projects resource condition change will only be observable in the medium to long-term and requires follow up and monitoring and evaluation.

native vegetation, focus on the relationship between community capacity and sustaining or improving rangeland health. By contrast, many vegetation projects in the more heavily cleared Hunter-Central Rivers and Murray catchments focus more on retaining and connecting regionally significant vegetation.

Recent research has identified that 'vertical trust' between landholders and sub-regional bodies, (such as community groups, Landcare and local government) and regional bodies (such as CMAs) is key to the adoption of sustainable land management and farming practices.²⁰ The NRC audits found that engagement with sub-regional bodies was less well developed than with individuals. CMAs must work collaboratively with sub-regional bodies to promote voluntary stewardship on private land and to build trust.

Many CMAs had started to build relationships with institutional collaborators to deliver projects and all CMAs audited had engaged local government in delivering a variety of projects including water quality, pest management and habitat restoration. Four of seven CMAs had established formal agreements or Memoranda of Understanding with local governments in their regions.

In the coastal and urban regions, institutional engagement and coordination is very challenging. When CMAs were established they were added to a mix of organisations with responsibilities that directly influence the CMAs' ability to set and meet targets. The CMAs were not given a clear space within which to establish themselves and exercise their roles.

However, the two coastal CMAs audited demonstrated a sound understanding of this institutional complexity and were developing some very effective partnerships, for example, Hawkesbury-Nepean CMA's preservation of hanging swamps project (Box 1). Hunter-Central Rivers CMA has also actively engaged with a local council to overcome problems associated with acid sulphate soils in the catchment, fostering a solution that was actively supported by all parties involved.

While CMA monitoring and evaluation programs are in their infancy, NSW cannot be sure that on-ground efforts are coordinated and contributing to lasting catchment scale change, rather than scattered improvements across the landscape. Developing a landscape approach is therefore imperative.

The NRC also identified several areas where individual CMAs could improve their performance in implementing CAPs. These CMA-specific actions are being finalised with each CMA Board.

Recommendation 2:

The Minister for Climate Change and Environment requires each CMA Board to oversee effective implementation of the suggested actions in the NRC's audit reports.

²⁰ As per footnote 7.

Box 1: Hawkesbury-Nepean CMA's preservation of hanging swamps project

The Hawkesbury-Nepean CMA has built strong links with local government via its Local Government Advisory Group, which represents all twenty-three councils in the Hawkesbury-Nepean catchment. For example, in 2006-07 the CMA collaborated with the Blue Mountains City Council as part of its Wetland Management Project, providing \$137,000 towards restoring swamps.

Hanging swamps are unique systems found in the Blue Mountains. The swamps are vital for maintaining clean water flows to creeks and providing habitats for the highly threatened Giant Dragonfly and the Blue Mountains Water Skink. Improving hanging swamps enhances the quality and quantity of water flowing into surrounding aquatic environments including Warragamba Dam. Many of these swamps are located in the urban-bushland interface and are subject to pressure such as stormwater run-off, soil erosion, weed invasions, inappropriate development and recreational activities.

The CMA supported the Council and community groups to protect the hanging swamps and overcome difficulties encountered during earlier work. They devised a range of activities including innovative 'soft-engineering' works such as coir logs, jute matting, wooden stakes and hessian sand bags to stabilise erosion gullies. These had the added advantage of not needing heavy machinery to install or move most of materials onto the site, with minimal impact on the surrounding vegetation.

Following bush regeneration work and the installation of coir-log structures, there are encouraging signs of regeneration of iconic plants like Button Grass and Coral Fern. More pools of standing water can also be seen and frogs are returning to the system. Information about the ecology of the systems and how to manage them is communicated to the wider community and Marmion Swamp is being promoted as a demonstration site for how to design and install soft-engineering structures.

This project illustrates:

- local parties developing professional trust and working collaboratively towards multiple goals to improve local and regional landscape function
- parties using local knowledge and adaptive learning to implement innovative solutions to a regionally specific NRM problem, and
- education and awareness programs that encourage additional investment by the community.

4 Prioritising investments to achieve sustained landscape improvement

Effective CAP implementation depends on effective investment prioritisation. Good prioritisation leads to actions and investments that maximise landscape benefits over the long term. CMAs' investment prioritisation should be based on sound science about biodiversity, water, land and community assets; balancing environmental, economic and social priorities across regional, state and national scales; capturing opportunities for collaboration; and consciously managing risks.

However, the NRC's audits found that CMAs' effectiveness in prioritising their investments is inconsistent. CMA prioritisation systems in general do not take sufficient account of a project's ability to provide multiple benefits and integrated NRM outcomes, as required by the Standard.

In addition, the audits found that CMAs do not have sufficient flexibility to expend their investment funds in the most effective and efficient way. As a result, their investments may not be making the greatest possible contribution to CAP targets and therefore the state-wide targets.

The following sections explain:

- how CMAs often prioritise investments based on single issues rather than on delivering improved landscape function, and
- the challenges that CMAs face in encouraging long-term outcomes while adhering to annual expenditure requirements.

4.1 CMA approaches to investment prioritisation

To comply with the Standard in their investment prioritisation processes, CMAs should be able to optimise their present investment to ensure the best possible long-term outcomes. The NRC audits found a good understanding amongst CMA staff of the multiple benefits that investments can deliver. However, many CMAs have taken a 'siloed' approach to prioritisation, targeting investments to specific natural resource assets in isolation. This may result in sub-optimal outcomes.

The NRC observed examples where decision criteria and tools used to prioritise projects for soil improvement were very different to those used for water and vegetation projects. Each of these prioritisation processes appeared only to consider the benefits for the discrete assets and not overall landscape function. For example, they did not account for the fact that an investment in vegetation plantings can deliver benefits for biodiversity, water quality, soil condition and productivity.

This approach is partly driven by investment planning and reporting requirements that are not sufficiently flexible to represent the integrated nature of all NRM investment. It is also driven by project delivery methods that rely on staff with highly specific areas of technical expertise.

CMAs' reporting requirements discourage them from prioritising investments that will best contribute to improved landscape function. The reporting system requires each investment to be reported against only one of the thirteen state-wide targets and therefore government cannot

see the full benefits of each dollar invested across the landscape. CMAs are rewarded for allocating investments to vegetation or water projects, rather than for designing projects for the broader goal of landscape improvement and community capacity building.

CMAs need a new reporting framework that allows them to report the outputs and outcomes of a single investment against one or more state-wide targets. This would encourage a more comprehensive approach to investment. It would require the development of a standard methodology for attributing both outputs and common costs across multiple targets on a consistent, robust and transparent basis.

An essential step in implementing such a framework will be to strengthen the program logic underpinning CMAs' CAPs. Many of the approved CAPs do not yet adequately demonstrate the linkages between a CMA's management targets and the state-wide targets.²¹ Improving the robustness of the CAP's program logic will help CMAs demonstrate the full value of adopting a landscape approach to NRM investment.²² In the absence of a framework that provides such flexibility, CMAs should use the upcoming CAP revisions to refocus the CAPs to achieve landscape function.

Some CMAs were trialling sub-catchment plans that would integrate all targets and prioritise specific geographic areas. In addition, DECC, with CMA support, is developing better tools (such as TOOLS 2 and SCARPA) to overcome these issues but progress needs to be accelerated.

The NRC audits found that despite considerable investment by DECC in developing decision-support tools only a few CMAs were using them. In addition, funding for further development, roll out and support of these tools has been exhausted. Developing appropriate decision-support tools and then assisting CMAs to use them would help CMAs to prioritise investment more easily and effectively.

4.2 Investors' funding requirements

The NRC audits also found that good prioritisation has been undermined by investors' requirements for CMAs to expend their budgets in single years. Single year budgeting inhibits the CMAs' capacity to invest in projects that require medium-term management activities, to ensure long-term outcomes, or to adapt to changing climatic conditions. This is particularly obvious in native vegetation stewardship projects where landholders have signed contracts to protect native vegetation for periods of fifteen years or in perpetuity. These contracts require stock exclusion by fencing or other means until the new canopy has closed; however, CMAs usually make the entire payment in the first year.

Compounding this problem was that CMAs were required to spend a disproportionate amount of funding in the final two years (2006-07 and 2007-08) of the NHT and NAP programs, rather than steady expenditure through the full five years of the programs. This was caused by poorly aligned planning timeframes and compounded by the drought. For example, new investment strategies that were the main mechanism for CAP delivery were approved before the CAPs were approved, and funding was allocated when CMAs were still setting up and without adequate capacity or systems. CMAs' efforts to 'catch up' their spending in later years coincided with worsening drought conditions.

²¹ See Natural Resources Commission 2006, *Progress of Catchment Action Plans - Their place in current and future natural resource management in NSW*, September and individual reports on CAPs.

²² Natural Resources Commission 2007, *A Landscape Approach to Vegetation Management*, June.

Consequently, in recent years CMAs have felt pressure to 'get money out the door', often having to spend large amounts of funding in shorter timeframes than originally intended. In many cases, this has reduced the imperative to prioritise effectively and efficiently, to set up repeatable systems and processes and to effectively leverage co-contributions. While the NRC audits found that nearly all observed on-ground works will have positive impacts, there is a risk that they may not have been as efficient or effective as possible because they had to be fast tracked.

During the audits, all CMAs called for greater flexibility in budgeting over a three to five year period to enable them to invest when landholders are ready to implement projects and climatic conditions are right. This could deliver much greater value for money over time. CMAs are also interested in using more innovative means to manage private investment funds, such as establishing catchment trusts and catchment levies. Box 2 illustrates how Western CMA has attempted to manage complex funding requirements within the limitations of the current system while prioritising projects.

There is a strong case for reviewing and re-negotiating financial arrangements and reporting requirements. This would include exploring mechanisms that would allow CMAs greater flexibility to spend when climatic conditions are optimal, more innovative ways of attracting and managing third party investment and promoting compliance with medium-term management actions necessary to ensure long-term outcomes.

Box 2: Western CMA's approach to managing funding requirements

CMAs receive funding through a range of grants and Australian Government, state and local programs. These programs differ in the natural resource issues they target, the timeframes of their funding cycles and their reporting requirements. Western CMA developed a prioritisation approach to effectively manage this complex funding environment while addressing multiple NRM issues.

The CMA identified priority areas within the catchment in which to focus specific activities. This was based on how landscapes in the region function. In advance of each funding round, the CMA called for project proposals from landholders and community groups that would contribute to the achievement of the Western CAP's management targets in its priority areas.

An assessment panel reviewed, costed and assessed the project proposals and ranked them in order of priority. Once funding was announced, the CMA applied the available funding to the ranked projects in order of priority until the allocated funding was exhausted.

Where available funding from investors was in excess of that required to achieve management targets, the CMA negotiated with investors to redirect funds to areas of higher priority. Where available funds were in excess of community uptake, the CMA called for additional applications and these were then assessed and prioritised. Works were then undertaken over the financial year.

Having a prioritised list of projects meant that the Western CMA could quickly and easily respond when it received additional funds from investors or when it needed to reallocate funding amongst its projects. Where prolonged dry periods increased the risk of failure of particular projects, such as tree planting, then funds were able to be transferred to prioritised projects that involved other activities.

Western CMA's approach illustrates compliance with the Standard, for example:

- that natural resource issues were considered at the appropriate spatial and temporal scale to maximise contribution to CAP targets, and
- that management of risks maximised the effectiveness of their investments and enabled the CMA to avoid or minimise adverse outcomes arising from funding uncertainty.

4.3 Spatial prioritisation at the state scale

The goals for government investment in NRM are represented by the thirteen state-wide targets under the themes of biodiversity, water, land and community. However, there is no relative prioritisation between these targets or in which regions across the state particular targets are most important. The targets do not identify where in different regions the CMAs should direct their investment. Instead, CMAs are supposed to apply the Standard to identify the range of government policies and community values relevant to particular landscapes and agree spatially explicit catchment targets. For CMAs to perform this role, government policies need to be expressed in terms that allow them to be integrated in different landscapes and expressed spatially.

In September 2005, the NRC recommended that:

*“state agencies should develop a high level policy that defines any additional state priorities for natural resource management....(which might) involve identifying particular assets in a geographic location that have state value, or developing strategies and policies for particular themes”.*²³

This was also reinforced in the NRC’s April 2008 report on *Allocating funding between NSW Catchment Management Authorities*²⁴ where state scale spatial prioritisation was found to be necessary in order to objectively determine how much funding each CMA should receive. The NRC believes it is necessary to continue this work on determining spatial priorities at the state level.

The NRC has prepared a separate report on each audit it completed that identifies the actions each CMA should take to improve its investment prioritisation systems. However, there is also a need for government action. In particular, the NRC believes the NSW Government should improve the funding and reporting arrangements, to provide CMAs with more flexibility to expend their investment budgets in the most effective and efficient way.

Recommendation 3:

The NSW Government better supports CMAs to prioritise their investments and therefore maximise landscape benefits from limited budgets.

The next steps are to:

- accelerate development of prioritisation tools to enable CMAs to consider multiple benefits from investments
- review and revise CMAs’ investment reporting arrangements
- review state-scale NRM policies to ensure they are spatially explicit at a scale that allows CMAs to integrate them into the relevant CAPs, and
- provide CMAs with the flexibility to expend investment funds over a multi-year period, and allow CMAs to use innovative ways to attract and manage private investment in NRM, such as catchment levies and trusts.

²³ Natural Resources Commission 2005, *Recommendations: Standards and Targets*, May.

²⁴ Natural Resources Commission 2008, *Allocating NRM funding between NSW Catchment Management Authorities*, April.

5 Ensuring data is used to inform policy and investment decisions

To effectively implement CAPs, NRM decision-makers need ready access to reliable resource condition data that is suited to their purpose. These data are essential to inform investment decisions, evaluate the success of projects in achieving CAP targets and drive continuous improvement through adaptive management in compliance with the Standard.

The NRC audits found the general lack of good monitoring data, at both the state and CMA scale, limits the ability of CMAs to prioritise investments and manage adaptively.

The NRC was unable to obtain data from the NSW Monitoring, Evaluation and Reporting (MER) Strategy to support its audits of CMAs' implementation of CAPs and to report on progress towards the state-wide targets. Nor were any of the audited CMAs able to access or provide complementary MER data to report on improvement in natural resource condition. For these reasons, the NRC cannot accurately report on progress towards the state-wide targets and the extent of CMA contributions to progress towards the state-wide targets at this time.²⁵

The following sections:

- provide an overview of the MER Strategy
- discuss the NRC's concerns about the implementation of this strategy
- discuss the NRC's concerns about CMAs' progress in monitoring, evaluation and reporting, and
- discuss CMAs' approaches to adaptive management.

5.1 The state-wide MER Strategy

In August 2006, the NSW Government committed to the NSW MER Strategy to:

"refocus the resources of NSW natural resource and environment agencies and coordinate their efforts with Catchment Management Authorities, Local Governments, landholders and other natural resource managers to establish a system of monitoring, evaluation and reporting on natural resource condition".²⁶

The strategy was to collate, refine and expand monitoring programs to better inform CMAs, state government, landholders, Australian Government and the community on the health of natural resources and how this was changing over time. Specific tasks were to:

- provide public access to resource condition data and protocols for how it could be used
- establish baselines for catchment and state-wide targets so we can monitor the success of CAPs, and
- enable many groups to use these common data sets to generate reports and analysis.

²⁵ The Australian National Audit Office (ANAO) also found the lack of data impeded program evaluations and performance reporting. See ANAO 2007-08, *Regional delivery model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality*. ANAO Audit Report No. 21 2007-08.

²⁶ NSW Government 2006, *NSW Natural Resources Monitoring, Evaluation and Reporting Strategy*.

The NSW MER Strategy is being implemented through thirteen cross-agency theme teams. CMAs are also developing complementary MER programs for CAPs; however, the data to support these programs is not yet publicly available.

5.1.1 Concerns about implementation of the MER Strategy

In 2005, the NRC advised government on the arrangements for delivering MER, recommending that implementation of an MER Strategy is phased in because of resource constraints on agencies and the complexity of linking activities and monitoring of CMAs at the regional level.²⁷

While the MER Strategy is sound, several of the NRC's recommendations were not followed. For example, the NRC advised that agencies 'get it right' for a small set of indicators before moving to implement MER across all themes. In contrast, agencies have focused limited resources on the full set of indicators. While there has been progress on all fronts, there is very limited publicly available data, standards and protocols that can be used by CMAs.

The NRC also recommended an independent review of the agencies' activities at key milestones to ensure the government's adopted arrangements are implemented, MER programs are scientifically sound and appropriate governance arrangements are in place. The review was intended to drive the continued development of a better-integrated, cost-effective and more comprehensive system that meets the multiple needs of NRM decision-makers. To date these reviews have not been done.

Significant cross-agency cooperation and commitment is evident in the thirteen theme teams responsible for implementing the MER Strategy. However, anecdotal evidence suggests that implementation ranges from excellent to poor across the various theme teams and aspects of the Strategy and that data management issues are a major impediment to easily available and accessible data.

For example, the NRC was unable to obtain data from the state MER program to support the audits of CMAs' implementation of CAPs and to report on progress towards the state-wide targets. The NRC also tried to access data directly from the theme teams; however, the theme teams explained that the data was unavailable for a number of reasons, including incomplete datasets, lack of quality assurance of the datasets and the storage of data across a number of unlinked locations. In some instances, data was provided to the NRC but was difficult to access and interpret. It remains unclear how MER data will support CMA work.

The theme teams are due to finalise Draft State of the Catchment Report Cards by December 2008. The Report Cards will provide new data but it remains unclear how they will meet CMAs' needs in terms of monitoring of performance, better prioritisation of investment or adaptive management. Increased transparency of information and access to MER data would enable CMAs to improve their decision support tools and investment decisions.

²⁷ As per footnote 23.

5.2 Variable progress in CMAs' MER

In addition to the state level MER Strategy, CMAs are developing complementary MER systems to meet their own region-specific needs.

5.2.1 CMAs' MER systems

Neither the implementation of the state MER Strategy nor the CMAs' MER systems are well integrated. A confused interface has developed between the two; partly because CMAs have been unsure what the state MER Strategy will provide and partly because MER requirements across the state differ in detail at the regional level.

The CMAs have taken one of three approaches to develop MER systems:

1. they have developed their own systems at considerable expense
2. they have contracted or entered into service agreements with DECC to provide MER systems, or
3. they are waiting on the state MER Strategy alone to provide outputs.

The NRC audits found that CMAs that independently developed systems have made greater progress. This approach has delivered some benchmark condition data; although implementation is patchy and not all themes are covered.

In the case of the second approach, few of the contracted outputs have been provided as planned. For example, in 2005, at least two CMAs started developing MER systems in collaboration with agencies but do not yet have functional systems. This delay has inhibited CMAs from evaluating the data they have available to them.

The NRC audits found that the CMAs that are waiting on implementation of the MER Strategy were reluctant to invest in MER systems when the state program may cost-effectively provide the necessary framework.

The NRC audits found that most CMAs had developed their own systems for reporting on project implementation for payment purposes. While some systems worked well for routine administration, few contained the feedback loops necessary for adaptive management.

Implementation of the MER Strategy must integrate with the CMAs' systems to deliver a multi-scale, state-wide MER system. This will require collaboration between agencies and CMAs.

5.2.2 Accessing spatial and project data from CMAs

The NRC found it difficult to access spatial and other project data during its audits. CMAs are using various data storage methods which are largely inconsistent with each other.

The NRC audits found that some CMAs used the Land Management Database (LMD), which holds project specific information and spatial data including project location, funding source, project type and progress; while others had developed their own systems for storing this type of data.

The NRC was not able to access data held within the LMD due to privacy issues surrounding the information. Storage of data within a central and accessible system, along the lines of the

LMD would make it easier to get a state-wide picture of CMA activities, funding allocation and prioritisation. This would assist with investigating the effectiveness of CMA outputs and their contribution towards CAP and state-wide targets. The current disparate storage methods and locations make completing these tasks very difficult.

5.3 Adaptive management in CMAs

The Standard outlines the NSW Government's commitment to adaptive management.²⁸ It should be noted that while adaptive management is essential for good NRM, there are very few examples of best practice approaches in the NRM sector.

The NRC audits found that some CMAs had begun to adopt adaptive management principles; that is, strategically anticipating change, learning from mistakes and adjusting plans and activities accordingly; or were developing business systems to support more structured approaches. For example, some CMAs had:

- undertaken program logic training to improve target setting, logic assumptions, performance indicators and project design
- implemented annual reviews to adjust programs, practices and delivery methods
- practiced hypothesis testing at the project level
- commissioned studies to fill knowledge gaps and reduce uncertainty
- documented feedback loops to improve the effectiveness of future projects; and
- established internal audit committees to track compliance, evaluate performance and promote improvement.

The example in Box 3 demonstrates how Hunter-Central Rivers CMA and its predecessors, applied adaptive management approaches to a problem over time resulting in multiple long-term benefits.

However, the NRC audits found that the ability of CMAs to adaptively manage and improve performance at the institutional level over time is restricted by underdeveloped information systems, lack of MER data and lack of focus on strategic performance development.

In summary, reliable resource condition data is essential for effective implementation of CAPs and the accountability framework under the regional model. The NRC believes the NSW Government should independently review the implementation of the MER Strategy, to improve and accelerate the process.

Recommendation 4:

The NSW Government independently reviews implementation of the MER Strategy to improve and accelerate its progress.

²⁸ As per footnote 3.

Box 3: Adaptive management in the Hunter-Central Rivers CMA River Works program

The River Works program is aimed at reducing the costly impacts of periodic flooding on weakened landscapes. Extensive vegetation clearing and grazing has allowed flood surges to cut banks and flood plains causing damage to the land and threatening town infrastructure. This program has been running since 1950, beginning with the Hunter Valley Conservation Trust and continuing through the Catchment Management Board and more recently the CMA.

The Hunter Valley Conservation Trust used community levies and state investments to stabilise riverbanks and reduce flood impacts by clearing debris and strengthening banks. The Trust's initial approach aimed to promote rapid flood water clearance through repairing damaged banks, but it was costly and often shifted the problem to new points of weakness. Although damage was repaired, the natural resilience of the river system did not improve.²⁹

With time the Trust's and subsequently the CMA's understanding of the role of vegetation in promoting river function improved. There were obvious linkages between vegetation clearing in the upper Hunter catchment and erosion, nutrient runoff and habitat pressures in downstream estuary areas. From best available science, the CMA identified a suite of short-term management targets that would cumulatively improve the resilience of the landscape in response to flood surges, whilst also improving soils and water resources.

The CMA now takes a different approach, utilising native vegetation at critical river reaches to slow flood flows, re-establish in-stream vegetation obstructions and gradually re-establish the essential features of the pre-clearance riparian zone. These new management approaches attracted increased community participation in vegetation maintenance along river banks in rural areas and towns, increased social and biophysical resilience and reduced maintenance costs for the state. The CMA has developed ways to use periodic funding 'surges' supplemented by ongoing community levies to address program needs.

The benefits, in terms of saved bank repairs, between flood events of 1955 and 2007, were estimated at "tens of millions" for these river reaches.³⁰ Detailed assessments of the costs and benefits of river works using this 2007 flood as a benchmark are being prepared by agencies and the CMA.

The River Works program illustrates:

- evolution from 'passive' adaptive management (that is, trial and error) to a more 'active' adaptive management approach (that is, learning by doing)
- the benefits of considering landscape function when planning and implementing 'paddock' scale activities
- a successful and continuing large scale rehabilitation of a biophysical system
- the long-term benefits of committed funding and sustained effort at a regional scale over time, and
- tangible evidence of progress towards NSW's aspirational goal for resilient landscapes that support the social, economic and environmental values of the community.

²⁹ Cook, N & Schneider, G 2006, *River Styles® in the Hunter Catchment*, Department of Natural Resources, NSW.
³⁰ Hunter-Central Rivers CMA Information Sheet *Upper Hunter River Flood above Maitland June 2007*.

6 Clarifying roles and accountabilities

Good governance in CMAs is necessary for effective implementation of CAPs because it enhances organisational performance, increases investor and community confidence and trust and underpins learning and adaptive management.

Good governance requires clear lines of accountability and clear articulation of functions, roles and responsibilities.

The NRC's audits found that the roles and accountabilities within the regional model are not sufficiently clear or aligned for CMAs to effectively and efficiently implement CAPs.

The audits also found that while CMAs' governance arrangements are fairly strong for this stage in their development, the performance of CMA Boards is mixed. In addition, the current arrangements for delivering support services to CMAs are causing inefficiencies and frustration.

Some of these issues can be addressed by the CMAs themselves, while others will require action by government and the CMAs together.

The following sections explain:

- the NRC's findings on the roles, responsibilities and accountabilities in the regional model
- the performance of CMA Boards and the provision of support services to CMAs in more detail, and
- the NRC's recommendations for government action.

6.1 Roles and accountabilities in the regional model

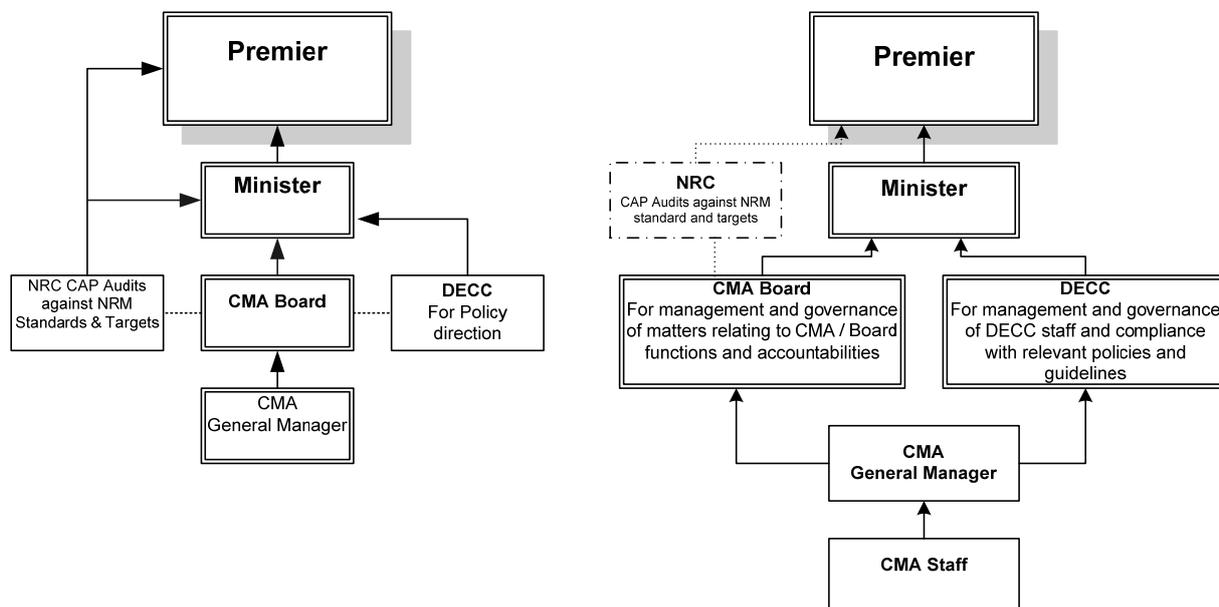
While the NRC observed examples of good practice and well-documented CMA governance procedures, there were also skill deficits, immature governance arrangements and a retreat from the legislative intention of the *Catchment Management Authorities Act 2003*.

The 2003 NRM reforms established CMAs as statutory authorities, with direct lines of accountability to the Minister and responsibility for their own affairs (including staffing and financial management).

Figure 2 shows the two accountability arrangements in place. The model on the left shows the 2003 arrangements, while the model on the right is an excerpt from the 2008 *Information Kit for CMAs* that specifies twin accountability lines for the CMA General Manager who is employed by DECC.³¹ In practice, DECC believes it only provides strategic oversight of corporate affairs in line with government policy and is not involved in any day to day decision-making but many CMAs feel this issue remains unclarified and distracts CMA staff.

³¹ *Catchment Management Authorities Information Kit*. Issue 2 – February 2008.

Figure 2: Two accountability arrangements in NRM: the 2003 version (left) and the 2008 version in the CMA Information Kit (right)



The reforms envisaged clear separation between the operations of NRM agencies and CMAs. Agencies were to be primarily responsible for leading and coordinating policy and scientific support, while CMAs were responsible for interfacing with the community to implement government investment programs at the regional level.³² In practice, this level of separation has been difficult to establish.

There is also significant confusion over roles and accountabilities and the lack of a direct relationship with the Minister. This is in part because DECC is the lead agency accountable to Cabinet for delivery of the NRM targets in the State Plan. It is also a response to the logistical challenges faced by successive Ministers in dealing with thirteen individual, regionally-based organisations.

The CMA Chairs' Council and General Managers' group are useful forums to share good practice and develop innovative approaches to manage common problems. The provision of enhanced secretariat services to the CMA Chairs' Council may help facilitate better relationships with the Minister.

CMA staff confusion around the multiple roles of DECC and multiple lines of authority has impacted on the ability of some CMA Boards to strategically guide their staff and to foster a healthy performance culture. CMAs recognise that DECC has tried to resolve some of the complexity and improve processes it inherited, but the approach has been piecemeal rather than a re-examination of the system as a whole.³³

Clarification of the relationships between CMAs, the Minister, DECC, NSW Treasury and the Australian Government is necessary and timely.

³² Second reading speech for the *Native Vegetation Bill, Catchment Management Authorities Bill and Natural Resources Commission Bill*, NSW Hansard Articles: LA: 12/11/2003 #51.

³³ The NRC understands the Minister has recently commissioned a review by DECC of the governance arrangements of CMAs to clarify roles and accountabilities.

6.2 Performance of CMA Boards

Community and skills-based CMA Boards are one of the strengths of the regional model. However, the benefits of this approach are offset somewhat by an imbalance in the skills of some CMA Board members and by current uncertainty in Board re-appointments. Currently, some CMA Boards lack members with sufficient corporate governance skills and many CMA Board positions are vacant.

The NRC observed that some CMA Boards possess strong governance systems and expertise, are backed by General Managers with strong strategic and financial management skills and have a culture of transparency, performance and learning. In addition, several CMAs had undertaken systematic reviews of their operations including performance reviews of Board members, the General Manager and Board functions.

In other CMAs, the NRC observed underdeveloped corporate governance protocols and management policies, a lack of strategic plans and vision beyond the high level CAP and an unclear separation of roles between the Board and staff.

6.3 Arrangements for delivery of CMA support services

The current arrangements for delivery of support services to CMAs are causing frustration and inefficiencies. Through a Memorandum of Understanding and a recently signed Service Level Agreement it has been agreed that government agencies will coordinate and supply support services such as accounting, staffing and various IT system needs to CMAs. While this arrangement makes sense in principle, CMAs regard the provision of most services as inadequate and delayed and believe they have little recourse to change service providers in a competitive environment.

Funding to CMAs is sometimes expressed as being conditional upon them applying the systems and software provided by state agencies. Some CMAs consider that these systems are unsuitable for their needs, for example SAP (for financial management) and the LMD (for spatial mapping), but feel they have no ability to negotiate alternatives.

There is a strong case for CMAs, as a collective, to put the provision of all support services out to tender and for government to provide funding to CMAs in ways that allow them to negotiate commercially with service providers. Alternatively, the commercial dispute resolution process between agencies and CMAs must be improved.

In summary, given the importance of good governance in the effective and efficient implementation of CAPs, the NRC believes the NSW Government should clarify the roles, responsibilities and accountabilities within the regional model.

Recommendation 5:

The NSW Government clarifies roles and accountabilities within the regional model.

The next steps are to:

- establish more practical and formal mechanisms for CMA Boards to report directly to, and be held accountable by the Minister for Climate Change and the Environment, collectively and individually

- ensure employment arrangements reinforce that General Managers are fully accountable to CMA Boards
- clarify decision-making roles and responsibilities between CMAs and DECC on NRM policy formulation, and
- improve the level of service provision to CMAs, either by implementing stronger commercial dispute resolution processes or by allowing CMAs to seek service provision outside of government.

7 Ensuring whole-of-government and community support for CAP implementation

All NRM stakeholders must embrace CAPs as the single, integrated whole-of-government and community delivery plan for NRM action and investment in each region and contribute to their effective implementation.

Government at all levels is a significant investor in NRM, but the alignment between government policies and programs and the achievement of state-wide targets is not well-defined. The level of integration and alignment relies on the commitment of CMAs and their stakeholders to effectively consult and collaborate where they have joint interests.

The NRC audits found there are a number of improvements that can be made to the next generation of CAPs that will help to build a broader sense of ownership across governments and the community to overcome constraints imposed by overlapping roles, responsibilities and actions of the various stakeholders in NRM.

The following sections explain:

- the need for whole-of-government and community support for CAPs and their implementation, and
- the need for alignment of whole-of-government policy and programs surrounding the achievement of the state-wide targets.

7.1 Developing whole-of-government and community ownership of CAPs

CMAs are responsible for improving NRM across their regions, yet have limited funds and no regulatory powers. To lead this change, CMAs must build capacity and momentum in their communities by 'setting a light on the hill' to muster individual stewardship, partnerships and institutional collaborations. A CAP does that by explaining what is required to improve landscape resilience in a specific region.

CAPs should focus on the region's natural assets and environmental, economic, social and cultural values. CAPs should set out short-term 'management targets' which lead to longer-term 'catchment targets' to improve the health and function of landscapes and the values they support. CAPs should align with the state-wide targets in ways that maximise progress towards the state-wide aspirational goal of resilient landscapes functionally supporting community values.

Some CMAs have taken a holistic approach to developing CAPs, integrating actions and policies of all government agencies. However others have focussed the CAP on what the CMA alone can influence and achieve. The NRC's audits found that this is largely because they found the task of integrating and coordinating the actions of many mismatched and segregated NRM policy portfolios highly challenging. This is particularly an issue in coastal and urban areas where there are a multitude of government policies and stakeholders, each with roles, responsibilities and actions that influence natural resource condition.

The NRC has identified a range of improvements that can be made in developing the next generation of CAPs, to promote government and community ownership:

- establishing whole-of-government ownership of the CAP from the beginning of the CAP review process
- recognising the CAP as the investment and action prospectus for government, industry and others by integrating NRM components of other plans including regional strategies, water sharing plans and regional conservation plans
- improving the CAP's strategic focus, prioritisation and risk management
- balancing regional issues and needs with state and national needs
- identifying and spatially representing priority natural resource assets and issues based on latest available science
- setting management and catchment targets to focus and guide all NRM activities in the region
- informing and helping to implement land-use planning decisions made at local, regional and state levels, and
- specifying how progress towards catchment targets will be monitored and evaluated.

The NRC has a mandate to continue to work with CMAs and agencies to improve the quality of the CMAs' CAPs. The majority of CMAs have indicated to the NRC that they intend to review the CAPs in 2009 and a number have already started the review process.

7.2 Aligning NRM-related policies and programs

The audits also found that NSW Government policies and programs are not sufficiently aligned, which leads to inefficiencies in actions towards the state-wide targets. For example, some land use and NRM planning processes and legislation do not have common objectives. Nor do they adequately incorporate analysis of landscape function and value in their decision frameworks. This presents a major risk to CAP implementation, particularly on the coast, as it means CMAs' attempts to achieve catchment-level targets and thus contribute to the state-wide targets for NRM can be undermined by land use zoning and development decisions.

To be effective, all relevant policies need to share a common view of the landscape functions provided by our natural assets and where development can best be accommodated to preserve the values of those assets, such as healthy rivers, clean beaches, diverse native species and economic and social amenity.

In addition the new Australian Government funding program, *Caring for our Country*, focuses on specific priorities and targets, threatening to reinforce the 'siloed' approach to investment observed in the audits (see section 4.1).

The following sections provide further discussion and examples of the constraints on CMAs as a result of poor alignment between regional and local land use planning policies and water and soil management policies.

7.2.1 Regional and local land use planning

Local government is a major player in NRM and can exert significant influence on the state-wide targets through land use planning decisions. This is particularly the case in coastal and peri-urban areas.

One of the key actions in the State Plan Priority E4 is “*integrating catchment planning with regional land use planning strategies and local government planning*”.³⁴ The NRC considers that the statutory signals to implement this action have not yet been established.

The NRC identified “language” barriers between CMAs and councils, for example:

- unlike Local Environment Plans (LEPs) or other such planning documents, CAPs are not geographically or spatially expressed. As a result local government cannot easily recognise the CAP’s regional NRM priorities and threats. This poses a major challenge for collaborative planning
- biophysical data is not available at the appropriate scale for planning decisions and there is limited capacity to manipulate the data meaningfully, and
- NRM and planning processes do not share common objectives. Planning instruments, such as Regional Strategies, Regional Conservation Plans and LEPs, have a significant impact on land-use and natural resources but do not share the objective of achieving catchment and state-wide targets for natural resources.

Examples of the potential conflict between planning decisions and NRM can be seen in the Hawkesbury-Nepean and Hunter-Central Rivers regions. Land releases and mining activities in these regions threaten to degrade the health of natural resources, such as native vegetation, through clearing for development and damming to secure water supply.

These barriers can be overcome but need to be addressed urgently or natural resources will continue to be degraded from the accumulated results of many small trade-offs at the local scale.

Recent planning reforms³⁵ were premised on giving local government adequate information on the NSW Government’s regional priorities to enable more efficient planning and to provide certainty to private landholders and potential developers. Slow progress in finalising key NRM strategies, such as the Regional Conservation Plans, limits certainty for local planning decisions and the achievement of the state-wide targets.

Some local councils have made significant progress in developing and exhibiting their new draft LEPs despite limited available information on natural resource priorities. If coastal councils have new LEPs in place early next year there is significant risk that these LEPs will not adequately consider the natural resource priorities relevant to their areas.

³⁴ As per footnote 2.

³⁵ Department of Planning 2007, *Improving the NSW Planning System: Discussion Paper*, NSW Government, Department of Planning, November.

7.2.2 Other NRM policies and programs

The state-wide targets do not inform the regulatory framework for water and soil management. Despite their role as the community interface, CMAs do not have sufficient influence at the regional scale to inform decisions and tradeoffs between different NRM and environmental objectives. This is particularly relevant where activities that consume significant natural resources, such as mining and dams, constitute a significant percentage of a CMA's area, or cover important areas in terms of landscape function.

The NRC acknowledges that some policy issues such as water are complex, sensitive and subject to inter-jurisdictional pressures. A centralised policy and macro-planning response is appropriate for these issues. However, it is logical for CMAs to have a formal role in providing input to government on the tradeoffs and integrating the implementation of water plans with other NRM policies to build community acceptance and capacity to implement these policies.

Importantly, all natural resources policy should be explicitly required to contribute to achieving the state-wide targets.

In summary, in the NRC's view, the NSW Government is not maximising the benefits from its investment in NRM because it often focuses on single, not multiple outcomes and not all NRM agencies demonstrate clear commitment to approved CAPs and the state-wide targets.

Recommendation 6:

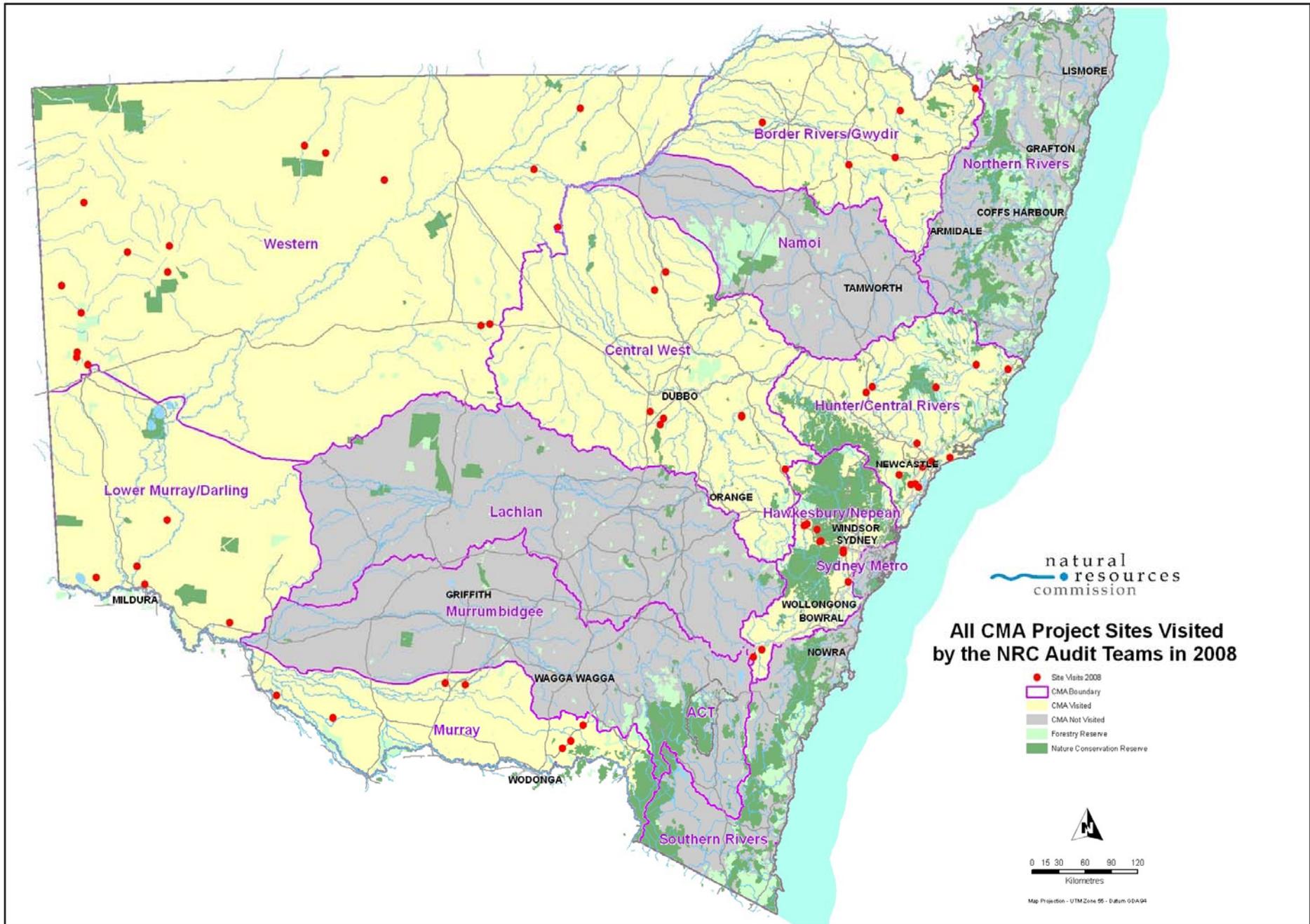
The NSW Government adopts a landscape approach across NRM and planning legislation, policy and programs, based on the principle of improving or maintaining resource condition, as required by the state-wide targets.

The next steps are to:

- agree a timetable for all agencies to contribute to CAP reviews and for government to approve revised CAPs as whole-of-government and community implementation plans for NRM at the regional scale
- ensure revised CAPs take a landscape approach³⁶, based on a clear understanding of what constitutes resilience in each region, and include spatial representation of the regional priorities
- establish a clear statutory imperative for integrating land use and NRM planning, and
- require all NRM policies, including for water and soils, to promote the state-wide targets, maintain and improve resource condition and be implemented via the approved CAP.

³⁶ Natural Resources Commission 2007, *A Landscape Approach to Vegetation Management*, June.

Appendix 1: Project Sites Visited



Map labels include:

- Western
- Lower Murray/Darling
- MILDURA
- Central West
- DUBBO
- Lachlan
- GRIFFITH
- Murrumbidgee
- WAGGA WAGGA
- Murray
- WODONGA
- Southern Rivers
- ACT
- Border Rivers/Gwydir
- Namoi
- TAMWORTH
- Hunter/Central Rivers
- ORANGE
- Hawkesbury/Nepean
- WINDSOR
- SYDNEY
- Sydney Metro
- WOLLONGONG
- BOWRAL
- NOWRA
- Northern Rivers
- ARMIDALE
- COFFS HARBOUR
- GRAFTON
- LISMORE

