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AUDIT REPORT

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List of acronyms

BMP	Best Management Practice
CAP	Catchment Action Plan
CMA	Catchment Management Authority
CPA	Catchment Priority Assets
CRC	Cooperative Research Centre
EBI	Environmental Benefits Index
IID	Institute for International Development
INFFER	Investment Framework for Environmental Resources
IS	Investment Strategy
LHPA	Livestock Health & Protection Authority
MERI	Monitoring, Evaluation, Reporting and Improvement
NCMA	Namoi Catchment Management Authority
NLGG	Namoi Local Government Group
NRC	Natural Resources Commission
NRM	Natural Resource Management
NROC	Namoi Regional Organisation of Councils
NSW	New South Wales
TOR	Terms of Reference
TRLPB	Tamworth Rural Lands Protection Boards
TSR	Travelling Stock Route
VINRM	Vertically Integrated Natural Resource Management

Document Status

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1. INTRODUCTION

The Natural Resources Commission (NRC) has a statutory role to audit whether the state's 13 Catchment Action Plans (CAPs) are being implemented effectively – that is, in a way that complies with *the Standard for Quality Natural Resource Management* (the Standard) and will help achieve the state-wide targets.

In 2008, the NRC completed seven of the thirteen audits. In 2009 the NRC contracted external consultants to undertake the remaining six audits. The NRC contracted the Institute for International Development (IID) to undertake the audit of the implementation of the CAP prepared by the Namoi Catchment Management Authority (CMA).

This Audit Report to the NRC contains the conclusions of the audit of the implementation of the Namoi CAP and the actions that the audit team suggests that the Namoi CMA Board take to improve this implementation. The full audit conclusions and suggested actions, and a summary of the CMA's response to the suggested actions, are included in Attachment 1 of this report.

The purpose of this report is to promote greater understanding of the Namoi CMA's performance, and to guide the CMA Board in continued improvement. The report explains:

- the audit conclusions and their significance
- how IID used the Standard in reaching the conclusions.

The NRC will use the conclusions, along with those of other audits and additional information, to inform a report to Government on progress in implementing CAPs and performance of the regional model.

1.1 Focus of the audit

Although a range of government agencies have a role in implementing CAPs, the NRC focused its first audits on the actions of the CMAs in NSW. This is because CMAs are the lead agencies responsible for implementing CAPs.

In addition, while state-wide and CMA-level monitoring and evaluation programs are being implemented, sufficient and consistent data from these programs were not available at the commencement of these audits. As a result, the NRC's initial audits were not able to test the contribution of CMA actions against accurate measurements of landscape-scale changes in natural resource condition that help achieve the state-wide targets. Instead, the audits focused on whether CMAs' planning, project implementation and other CAP-related activities, and the business systems that guide and support these activities, are reaching the quality benchmarks set by the Standard.

The audits focused on four lines of inquiry:

1. Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
2. Are the CMA's vegetation projects contributing to improved landscape function?
3. Is the CMA actively engaging its communities?
4. Is the CMA effectively using adaptive management?

For each line of inquiry, the NRC required the audit team to assess not only whether the CMA is doing the activity, but whether it is doing it effectively – that is, by applying the most relevant elements of the Standard and achieving the required outcomes of the Standard. The NRC believes a CMA that is doing each of these four activities in a way that reaches the quality benchmarks set by the Standard has the greatest chance of achieving multiple NRM outcomes and making the highest possible contribution towards the state-wide targets.

Finally, in pursuing each of the four lines of inquiry, the audit team was required to focus on CMA projects that use vegetation to improve landscape function. It was not practical to look at all CMA programs and projects, given the timeframe for the audits. The NRC considers that focusing on vegetation-related projects was the best option, as in general these have most potential to contribute to multiple NRM targets across more than one biophysical theme (for example, improvements in river health, soil function and native species habitat).

1.2 Summary of audit findings

To conduct the audit, the NRC identified what an audit would expect to find if the CMA was doing each of the four activities listed above effectively. For each line of inquiry, the NRC identified three or four criteria they would expect the CMA to be meeting. The NRC also identified the elements of the Standard that are most relevant and important to that line of inquiry, and the CMA behaviours and other outcomes it would expect to find if the CMA is properly applying those elements of the Standard.

The audit team then assessed the CMA's performance against these expectations by interviewing a sample of CMA Board and staff members, landholders and other stakeholders; reviewing a range of CMA and public documents; and visiting projects.

Finally, the audit team identified the actions the CMA should take to improve its performance in implementing the CAP in compliance with the Standard.

The sections below summarise the audit findings for the Namoi CMA, including the NRC's expectations, the audit team's assessment of Namoi CMA's performance against these expectations, and the actions the audit team suggests the CMA take to improve its performance. As noted above, the full audit conclusions and suggested actions for Namoi CMA are provided in Attachment 1.

1.2.1 Prioritising investments to promote resilient landscapes

If a CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities, the NRC would expect to find that it has a commonly understood definition of what constitutes resilient landscapes in its region. For example, its Board members and staff would be able to consistently explain the main natural resource assets in the region, and the interactions that characterise healthy landscape function. They would know the main threats to the assets and landscape function, and the environmental, economic, social and cultural value the community places on those assets. In addition, they would also agree on the options for action and how these actions promote resilient landscapes.

The NRC would also expect to find that the CMA has a system for ranking investment options that uses a wide range of information about the assets and threats, and can identify the projects that will contribute to multiple NRM targets across more than one biophysical theme. This system would be transparent,

consistent and repeatable. In addition, the NRC would expect to find that the CMA has a system to ensure its short- and long-term investments are consistent with each other and with the catchment-level targets in the CAP.

Our audit of Namoi CMA's implementation of the CAP found that:

- The CMA had a commonly understood definition of what constitutes resilient landscapes in the region. The CMA had undertaken a wide range of reviews and studies to build its scientific knowledge of landscape assets and threats.
- The CMA had recently developed a 'Resilient Landscapes Policy' but had not used new data or input from the Board or stakeholders to develop it. Consequently the policy had not incorporated new knowledge to refine the common understanding of what constitutes resilient landscapes in the region in the face of emerging threats.
- The CMA had a clearly documented and well defined system that ranked investment options. The system incorporated best available information and multiple CAP target achievement. Prioritisation was predominantly based on biophysical assets and the CMA had not yet incorporated socio-economic data to the same extent.
- The CMA had systems that ensured short and long-term investments were consistent with each other and that they aligned with other planned targets.

The audit team suggests that the Namoi CMA Board take a range of actions to address the issues identified by the audit and so improve the extent to which its implementation of the CAP complies with the Standard. These actions include:

- Using the CAP review to consider emerging threats and new data, to refine its common understanding of resilient landscapes in the region.
- Reviewing its systems to rank investments to incorporate community values and socio-economic data.

1.2.2 Delivering projects that contributed to improved landscape function

If a CMA is effectively delivering vegetation projects that contribute to improved landscape function, the NRC would expect its Board and staff to have a common understanding of how the short-term outcomes of its projects are expected to lead to long-term improvements in natural resource condition, and that the expected long-term outcomes are documented. The NRC would also expect to find that its projects are achieving the expected short-term outcomes, and that the CMA has a system for identifying opportunities to further leverage the experience of its project partners to add value to the initial projects.

In addition, the NRC would expect to find that the CMA is attracting additional funding and in-kind contributions to match government investments in projects, and that it has systems in place to monitor and evaluate project outcomes over time.

Our audit of Namoi CMA's implementation of the CAP found that:

- The CMA had documented expected long-term outcomes in the CAP and other strategy documents and these were consistent with each other. Project records clearly documented the expected long-term outcomes and the linkages to management actions. The outcomes and linkages were commonly understood by CMA staff and landholders.

- The CMA had successfully achieved robust project outputs in the inspected projects. Project outputs had strong logic linkages to long-term outcomes. The audit team observed demonstrated changes in management practices and some changes in resource condition. Together these findings indicated that achievement of long-term outcomes was likely.
- The CMA had attracted additional resources from landholders and project collaborators and recorded the contracted contribution in project files. There were differences between what had been negotiated during project design and what had actually been contributed during project delivery. Consequently the full extent of additional resources attracted by the CMA had not been accurately recorded.
- The CMA had established a comprehensive monitoring, evaluation, review and improvement (MERI) system to track ongoing achievements of projects. The CMA had commenced implementation and aimed to fully implement the system by May 2010.
- The MERI system did not incorporate the monitoring of project completion or delivery of project outputs. In most projects inspected, project outputs had been adjusted by negotiation between the landholder and CMA staff. However, these changes were not recorded and therefore the lessons learned during implementation were not captured for use in the design of future projects.

The audit team suggests that the Namoi CMA Board take a range of actions to address the issues identified by the audit and so improve the extent to which its implementation of the CAP complies with the Standard. These actions include:

- Developing a methodology that could more accurately estimate and record additional resources contributed by stakeholders.
- Reviewing the contract compliance process and linking output monitoring to the MERI system to ensure lessons learned during implementation are captured and applied to the design of future projects.

1.2.3 Effectively engaging its communities

If a CMA is effectively engaging its communities, the NRC would expect it to have identified the key community groups and stakeholders it should consider in planning and undertaking its work. The NRC would expect its Board and staff to have a shared understanding of these groups, including their knowledge, capacity and values, and the socio-economic and cultural opportunities and threats they pose to the successful implementation of the CAP.

In addition, the NRC would expect the CMA to be implementing an appropriate engagement strategy for each key group in its community, which is designed to build trust in the CMA, promote two-way knowledge sharing, and ultimately achieve outcomes. The CMA would also be implementing a communication strategy that promotes collaboration, sustainable behavioural change and feedback. These strategies would be based on its knowledge of the interests, capacities and values of each group, and their communication preferences.

Our audit of Namoi CMA's implementation of the CAP found that:

- The CMA had identified its key stakeholders in policies and strategies as well as reports commissioned by the CMA. The CMA Board and staff had a shared understanding of community attitudes, capacity and values across the catchment.
- The CMA Board and staff recognised that partnerships and strong associations with key stakeholders are essential to delivering the CAP. The CMA had targeted selected NRM players in its catchment to

develop capacity, share knowledge and identify opportunities and threats to CAP implementation. This included major industries, local government and indigenous communities.

- The CMA was implementing its Engagement Strategy through various sophisticated approaches that demonstrated a meaningful understanding of engagement. Community engagement had delivered better NRM outcomes, built trust and capacity, promoted two-way sharing of knowledge and provided benefits to both the CMA and the community.
- The CMA participated in two local government representative groups: the Namoi Local Government Group (to deliver NRM projects) and Namoi Regional Organisation of Councils (to deal with broader policy issues that affect the catchment). The division of roles between the two groups was unclear to stakeholders. The CMA had not engaged councils on the broader issue of how to effectively integrate CAP objectives into council strategic planning processes.
- The CMA's communication activities were targeted and reflected the varied values of catchment communities. The Communication Strategy did not independently promote collaboration or sustainable behavioural change. However, it was designed to be read and implemented in conjunction with the Engagement Strategy and collectively they met these criteria.

The audit team suggests that the Namoi CMA Board take a range of actions to address the issues identified by the audit and so improve the extent to which its implementation of the CAP complies with the Standard. These actions include:

- Using the two local government groups to explore how best to effectively integrate CAP objectives into council strategic planning processes.

1.2.4 Effectively using adaptive management

If a CMA is effectively using adaptive management, the NRC would expect it to have documented how it will apply the principles of adaptive management in its planning and business systems. The NRC would expect its Board and staff to be able to explain how the CMA uses adaptive management to promote continuous learning at both an individual and institutional level. They would also be able to explain the key knowledge gaps and uncertainties related to the assets and threats in the region, and how the CMA manages these.

In addition, the NRC would expect the CMA to use monitoring and evaluation systems that test the assumptions underlying its investments in improving landscape function and resilience, and use appropriate experts to assess the planned and actual outcomes of these investments. There would also be an organisational focus on applying new knowledge (gained from monitoring and evaluation or other sources) to increase the effectiveness of investments. Finally, the NRC would expect the CMA to have and maintain information management systems that support its adaptive management processes.

Our audit of Namoi CMA's implementation of the CAP found that:

- The CMA had clearly and consistently documented the principles of adaptive management in its planning and business systems. The 'plan', 'implement' and 'audit' stages of the adaptive management cycle were being applied effectively. However, there was a lack of certainty as to whether the outcomes of reviews were being implemented. This weakness in the implementation of the 'response' stage of adaptive management reduced the CMA's ability to promote continuous learning at both institutional and individual levels.
- The CMA had developed a comprehensive MERI Strategy to drive the strategic and operational use of monitoring and evaluation. The MERI strategy clearly laid out the purpose, principles, as well as a

description, of monitoring and evaluation of the CMA's business. This included the ongoing achievement of projects.

- The CMA had begun implementing the MERI strategy. Baselines were being established and monitoring information collected and entered in to the information system. By including this data into an already comprehensive information base, the CMA was well advanced in developing an information asset of significant value to all NRM asset managers in the catchment. However, implementation was largely focussed on collecting biophysical data relating to resource condition change. Further, the CMA had not yet linked its other monitoring and evaluation processes, such as monitoring of project outputs, communication and media, risks and review outcomes, to the overall MERI system.
- The CMA demonstrated maintenance of a comprehensive information management system and collection of an extensive database of information capable of supporting adaptive management processes. The CMA had scheduled the development of an information management strategy during 08/09 in recognition that it needed to address gaps in available data and a need to grow the capacity of the system.

The audit team suggests that the Namoi CMA Board take a range of actions to address the issues identified by the audit and so improve the extent to which its implementation of the CAP complies with the Standard. These actions include:

- Developing and implementing a robust internal audit process at Board level that would enable the CMA to continually test and improve its response to lessons learned.
- Reviewing and updating the MERI strategy and the MERI implementation timeline to ensure that all monitoring and evaluation processes are included and prioritised for implementation. These processes would include, but not be limited to, monitoring of project outputs, communication and media, risks and the lessons learned from reviews and evaluations highlighted elsewhere in this report.

1.3 Structure of the report

The rest of this report explains the audit conclusions and how the audit team used the Standard in reaching those conclusions in more detail. It is structured around each of the four lines of inquiry as follows:

- Chapter 2 describes the audit team's assessment of whether the CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities
- Chapter 3 focuses on whether the CMA's vegetation projects are contributing to improved landscape function
- Chapter 4 discusses the audit team's assessment of whether the CMA is effectively engaging its communities
- Chapter 5 looks at whether the CMA is effectively using adaptive management.

The attachments provide the full audit conclusions, suggested actions, more detailed information about the audit, and an overview of the context for the audit conclusions including a summary of the key features of the Namoi region and CMA. As noted above, a summary of the CMA's response to suggested actions has been provided in Attachment 1.

2. PRIORITISING INVESTMENTS TO PROMOTE RESILIENT LANDSCAPES

The audit's first line of inquiry was to assess whether the CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities. This line of inquiry focused on planning – the first step in the adaptive management cycle. Its aim was to assess whether the CMA had established the knowledge, understanding, systems and procedures required to undertake this step effectively, in line with the Standard.

Although the CAP itself documents the priorities in the region, the NRC recommended approval of each CAP on the basis that the CMA would continue to improve the plan's quality and potential to contribute to the state-wide targets. Therefore, the CMA cannot simply spend its funds in line with the CAP. Rather, it needs to continue to apply the Standard in implementing the CAP. This will enable it to continually refine its investment priorities as its knowledge of the landscapes and communities in its region improves, and its understanding of best-practice NRM evolves.

The NRC identified three criteria that they would expect a CMA to meet in order to effectively prioritise its investments in compliance with the Standard. These criteria include that the CMA had:

- a commonly understood definition of what constituted resilient landscapes in its region
- a system for ranking investment options that took account of factors such as scientific and local knowledge; socio-economic information; community and investor preferences; potential for partners to contribute matching funds or in-kind support, and potential to achieve maximum outcomes, for example, by contributing to multiple NRM targets across more than one biophysical theme
- a system that ensured that its short- and long-term investment priorities were consistent with each other, and with the catchment-level targets in the CAP.

The NRC identified the elements of the Standard that are most relevant and important for meeting these criteria. The NRC also identified the behaviours and other outcomes they would expect the CMA to demonstrate if it is properly using these elements of the Standard, and thus meeting the criteria to a level of quality consistent with the Standard.

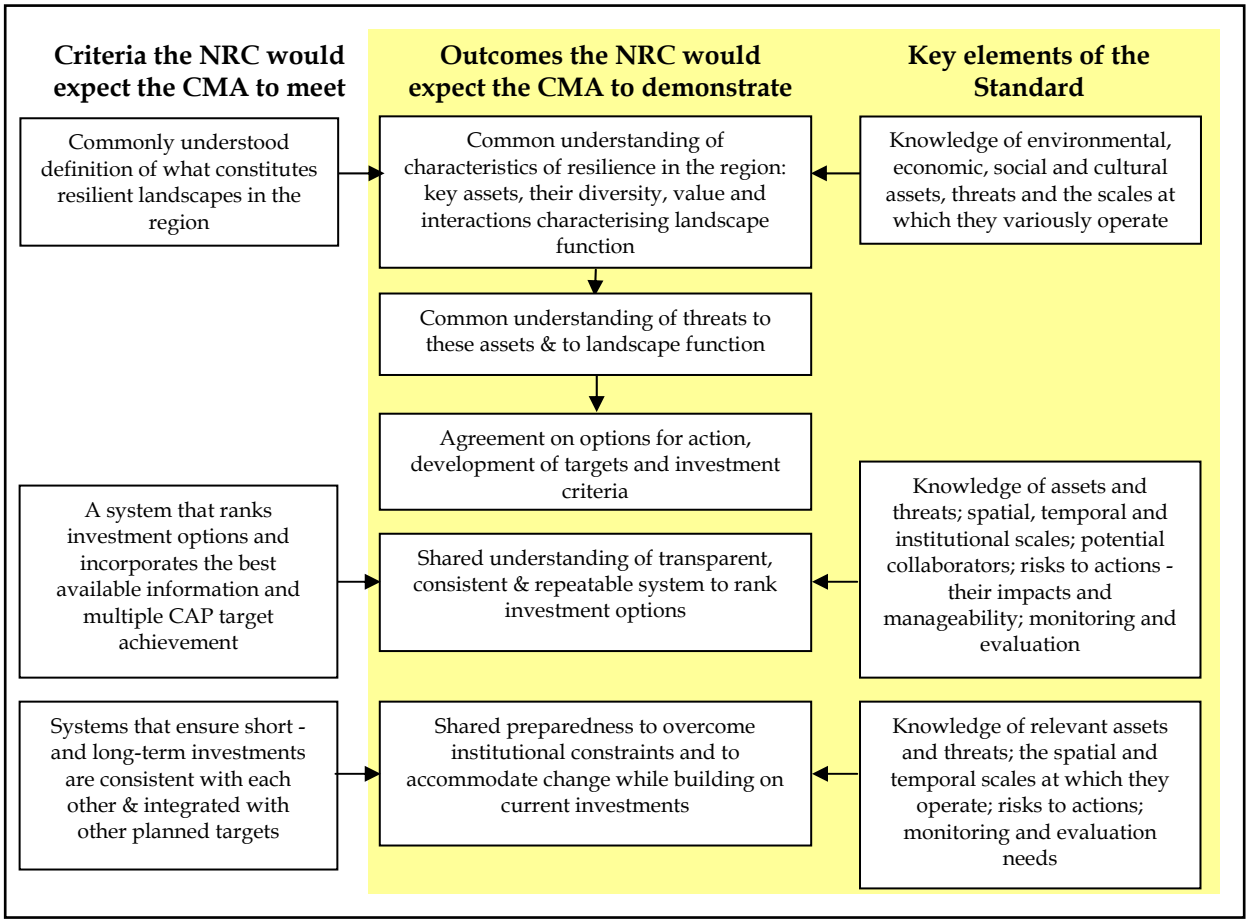
For example, if the CMA is meeting the first criterion (having a commonly understood definition of what constitutes resilient landscapes in its region) in a way that complies with the Standard the NRC would expect it to be collecting and using the best available knowledge on the natural resource assets and threats in its region, and on the economic, social and cultural values its community places on those assets. The NRC would also expect it to be considering the scales at which the assets and threats operate, and determining the optimal scale at which to manage them to achieve multiple NRM benefits and integrated outcomes.

As a result, the NRC would expect to find that its Board members and staff can consistently explain the main natural resource assets in the region, and the interactions that characterise healthy landscape function. The NRC would also expect them to understand the main threats to the assets and landscape function, and the environmental, economic, social and cultural value the community places on the assets. In addition, they would agree on the options for action to address the threats and maintain or improve the quality of the assets, and the criteria for deciding the actions in which the CMA should invest.

Figure 2.1 provides an overview of this assessment framework. The criteria the NRC would expect the CMA to meet are shown in the left hand column, the most relevant and important elements of the Standard

for meeting these criteria are in the right hand column, and the behaviours and other outcomes the NRC would expect the CMA to demonstrate if it is using these elements of the Standard are shown in the centre column.

Figure 2.1: The framework the audit team used to assess whether the CMA was effectively prioritising investments to promote resilient landscapes



The sections below discuss each criterion, including why it is important and what the audit of the implementation of the Namoi CAP found in relation to it.

2.1 Commonly understood definition of resilient landscapes

NSW's aspirational goal for natural resource management is resilient landscapes – that is, "landscapes that are ecologically sustainable, function effectively and support the environmental, economic, social and cultural values of our communities". At its simplest, a CMA's role is to coordinate investment to improve NRM across its region and deliver outcomes that make the greatest possible contribution to the achievement of this goal. To do this, the CMA must have a commonly understood definition of what constitutes resilient landscapes in its catchment – its Board and staff members need a consistent understanding of what the goal means for the particular landscapes and communities in its region.

The audit found that Namoi CMA had a commonly understood definition of what constitutes resilient landscapes in the region. This understanding was expressed in the CMA's vision of "Vibrant communities and landscapes" and further explained in the environmental policy within the CAP. This integrated picture

of resilience was strongly supported by the majority of the Board and senior staff who had a very strong view on the vital role of the community in building and maintaining resilient landscapes, as well as the biophysical priorities in the region.

The CMA had undertaken a wide range of reviews and studies to build its scientific knowledge of landscape assets and threats. The CMA had also developed a comprehensive database of biophysical data. A socio-economic study, commissioned by the CMA in 2006, identified the emerging threat posed by extractive industries. Some Board members and staff now considered increased mining to be the most prominent threat to landscapes within the region.

There was some evidence that the threat from increased mining was promoting differences of opinion between Board members, staff and stakeholders on the CMA's options for action. However, the CMA had not yet fully integrated newly acquired information into its understanding of landscape assets and threats and resolved these differences. While the CMA had recently developed a 'Resilient Landscapes Policy' to more clearly define its understanding, the development process had not utilised new data or included input from the Board or stakeholders. Consequently the policy had not incorporated new knowledge to refine the existing understanding of what constitutes resilient landscapes in the region and did not provide a basis for resolving conflicts in the face of emerging threats.

In respect to the Standard the CMA:

- demonstrated it had developed knowledge of assets, threats and the scales at which they operate, to initially build an understanding of landscape function (*Collection and use of knowledge, Determination of scale)*
- could not demonstrate it was integrating emerging new knowledge to continue to refine the common understanding of resilient landscapes within the region and ensure ongoing shared agreement on options for action (*Collection and use of knowledge, Risk management, Monitoring and evaluation*).

2.2 A system for ranking investment options

Our knowledge of biophysical and natural systems is incomplete and evolving. People's interactions with natural systems are also dynamic, and community values evolve over time. Because of this, CMAs need to continually seek out improvements in knowledge and adjust their focus accordingly. Their systems for ranking their investment options need to use a wide range of information – such as scientific and local information on the assets and threats in the catchment, as well as information on the values the community places on the assets, and on potential collaborators and their capacity.

In addition, CMAs have received limited government investment and have an enormous amount to achieve if we are to realise the goal of resilient landscapes. This means they need to invest these funds in ways that will make the greatest possible contribution towards as many catchment-level and state-wide targets as possible. To do this, they need a system for ranking investment options that takes account of the options' potential to contribute to multiple targets.

The audit found that the Namoi CMA had a clearly documented and well defined system to rank investment options. The system incorporated the best available information and multiple CAP target achievement. The system described in the CAP had been maintained but refinements had been made as the CMA's knowledge of assets and threats and its ability to analyse spatial information had improved.

In 2004, prior to the development of the CAP, the CMA indentified priority investment areas by ranking the 40 sub-catchments in the region. These priority areas were used to target investment until the CAP was approved in 2007. From then on, the CAP targets provided the basis for delivering incentive funding.

The CMA used three-year rolling Investment Strategies (IS) to allocate its investment and define the expected achievement against each CAP Management Target. In each investment program the majority of funds were targeted at a selection of sub-catchments which had been identified as priority assets, based on the CMA's previous ranking of the 40 sub catchments. The CMA had then targeted the remainder of the funding toward specific opportunities that had been identified elsewhere in the catchment and where the investment would deliver planned NRM outcomes. (Box 2.1) The CMA also established a Science Champions Group that developed procedures for the ongoing collection of knowledge to improve its prioritisation processes over time.

The IS was further refined each year within an Annual Implementation Plan, which set out the project level activities for the next 12 months. Projects that included a mix of activities were then developed. This mix promoted the achievement of multiple outcomes which in turn contributed to one or more CAP targets. An Environmental Benefits Index (EBI), specifically tailored to each program, was then applied to determine the amount to be invested in on-ground works within each project. These EBIs incorporated the investment principles outlined in the environmental policy in the Namoi CAP.

As the CMA's systems had improved, it had begun to consider how to incorporate socio-economic data into its prioritisation system. One study commissioned by the CMA recommended that further improvement could be achieved by placing greater focus on socio-economic factors during program development and project assessment.

In 2008 the CMA engaged external expertise to reprioritise its sub-catchments and selected two for priority investment. A sub-catchment action plan, that included a variety of works, was developed for both of these priority sub-catchments. The sub-catchment action plans identified target areas, allocated a budget and designed outputs for each activity. However, at no point in this process had the CMA considered socio-economic criteria or the capacity of communities to engage. This indicated that prioritisation was still predominantly based on biophysical assets and the CMA had not incorporated socio-economic data to the same extent.

In respect to the Standard, the CMA:

- demonstrated it had consistently applied available biophysical knowledge of assets, threats and spatial priorities, and scale to prioritise investment, design programs and assess individual projects (*Collection and use of knowledge, Determination of scale*)
- could not demonstrate it had included a socio-economic based analysis of assets and threats to prioritise investment, design programs and assess individual projects (*Collection and use of knowledge, Community engagement*).

Box 2.1: Central North Livestock Health & Pest Authority – Targeting areas of stock routes to conserve high priority remnant vegetation.

The Namoi CMA prioritised its investments in the region to target high priority assets, and collaborated to implement projects that made effective use of this investment. An example of this included collaboration with the Central North Livestock Health and Pest Authority (LHPA) to secure and preserve high priority biodiversity assets on travelling stock routes (TSRs). This approach could be replicated in other TSRs and public lands in the catchment and elsewhere in NSW.

LHPAs are managers of travelling stock routes (TSRs) in NSW. The Central North Livestock Health & Pest Authority (formerly Tamworth Rural Lands Protection Board or TRLPB) controls one of the largest networks of TSRs in the Namoi catchment. These routes link to areas to the north and south of the catchment.

The Namoi CAP identified these TSRs as high priority strategic biodiversity assets because *"they provide regional linkages of vegetation and allow movement of species through the corridors, which assist the survival and adaptation of species to changing conditions".*

The Central North LHPA, like others across NSW, needed to assess and manage its assets to maintain biodiversity but was short of the resources needed to achieve the desired outcomes. The CMA was aware that TSRs were due to be rationalised and potentially sold off or leased out for grazing. The CMA recognised the risk that if this occurred, valuable areas of native vegetation and the linkages between them could be lost. The CMA therefore offered assistance to the LHPA to undertake a detailed survey of TSRs to identify conservation assets.

The survey, completed in 2006[1], identified 169 sites of significance. These were ranked according to conservation value and their lack of value as functioning TSRs. This provided the LHPA with a clear basis for selecting reserves that could be retained but where stock could be excluded.

Subsequently the CMA entered into an agreement with the LHPA to fence six selected areas and establish fifteen monitoring and evaluation sites. As a result 1641 ha was now being managed for conservation. Under its agreement with the CMA the LHPA is responsible for managing these areas to control weeds and feral pests and exclude domestic stock for the next ten years.

(*Left: Fencing to exclude stock with an observable difference in ground cover between the fenced area to the left and the grazed TSR to the right)*

At one of these TSR project sites inspected there was an observable difference in the groundcover between the preserved area and the adjacent area that was still being used as a TSR. There was also evidence of natural regeneration of native shrubs. Monitoring sites had been established and initial baseline data collected.

The six sites provided a sound base to assess changes to biodiversity that could further improve the

[1] *Results of Conservation Assessment of Tamworth Rural Lands Pastures Board Reserves and Travelling Stock Routes*. North West Ecological Services August 2006.

understanding of how remaining landscape assets within TSRs could be best managed.

(*Right: An example of the vegetation corridor being preserved by the project with extensive ground cover evident as a result of stock being excluded from this part of the TSR)*

2.3 Systems that ensure consistent short and long-term investments

The time lapse between changes to the management of natural resources and the improvement in the function of natural systems can be significant. In the interim much can change, and CMAs need to accommodate this change without losing focus on the long-term objectives of their region's CAP. To do this, CMAs need systems to help them adaptively manage towards long-term targets as they learn what works and what doesn't, and as the environmental, economic, social and cultural landscapes around them change.

The audit found that the Namoi CMA had systems that ensured short and long-term investments were consistent with each other and that they aligned with other planned targets.

The CMA had built its CAP on the previous Namoi Blueprint (1996) and the Namoi Community Catchment Plan (1999). The CMA decided that because the CAP was an unfunded document the CAP targets needed to be strategic rather than quantitative. More detailed quantitative (SMART) targets were included and reported against in each subsequent investment strategy. Achievements were assessed and targets adjusted when rolling from one year's plan to another rather than within any one year.

The strength of the prioritisation system meant that the CMA could respond to fluctuations in expenditure requirements by simply adjusting its assessment criteria to include more low and medium priority sub-catchment projects. This flexibility enabled the CMA to better meet expenditure requirements.

The CMA developed the Investment Program (08/09) to accommodate the prevailing climate of significantly reduced government funding. Senior management assessed the importance of existing programs and their capacity to deliver on-ground works. This resulted in investment being targeted through two programs only during the 08/09 financial year. The bulk of investment was targeted at activities that delivered multiple outcomes within the two priority sub-catchments. This was done through the holistic Vertically Integrated NRM (VINRM) program. The balance of investment targeted selected high priority assets across the catchment. This was done through the Catchment Priority Assets (CPA) program.

The Australian National Audit Office's 2008 report on the NRM regional delivery model prompted a move by the CMA to include a competitive process in its assessment of projects. A tendering process directed funds to the most cost effective projects; those with the highest contribution to targets for the smallest investment. This further strengthened the CMA's emphasis on efficiency.

An external evaluation commissioned by the CMA noted that while the CMA had needed to adjust its priorities to meet investor preferences the robust set of decision support tools in its prioritisation system had enabled it to promote progress towards achieving its targets. Despite the adjustments to the allocation of funding the system had remained effective.

In respect to the Standard, the CMA:

- demonstrated that it had evaluated and adapted its short-term investments to promote integrated long-term outcomes (*Collection and use of knowledge*, *Determination of scale*, *Monitoring and evaluation, Information management*).

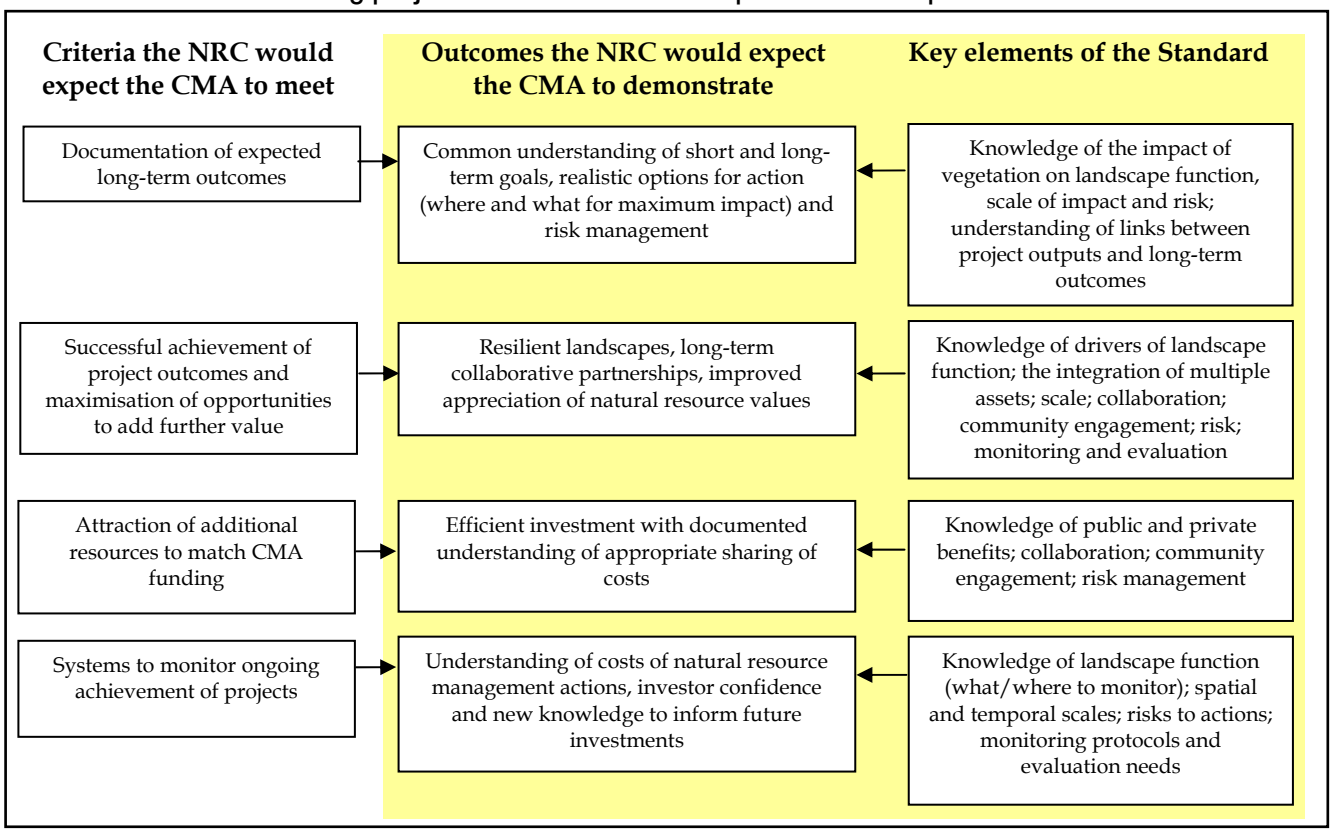
3. DELIVERING PROJECTS THAT CONTRIBUTE TO IMPROVED LANDSCAPE FUNCTION

The audit's second line of inquiry assessed whether the CMA's vegetation projects are contributing to improved landscape function. CMAs should promote short-term improvements in the management of natural resources in their catchments that will contribute to long-term improvements in natural resource condition. To understand whether they are pursuing this aim in a way that meets the quality benchmarks set by the Standard, we assessed whether they were meeting four criteria. These were that the CMA:

- documents the expected long-term outcomes of projects it invests in
- is successfully achieving short-term project outcomes, and maximising further opportunities to add value
- is attracting additional resources to match its funding in projects
- has a system to monitor achievement of ongoing project outcomes.

As for all lines of inquiry, the NRC also identified the elements of the Standard that are most relevant to meeting these criteria effectively, and the behaviours and other outcomes the NRC would expect to see if the CMA is using those elements of the Standard. These are shown in Figure 3.1.

Figure 3.1: The framework the audit team used to assess whether the CMA was effectively delivering projects that contribute to improved landscape function



The sections below discuss each criterion, including why it is important and what the audit found in relation to it.

3.1 Documentation of expected long-term outcomes

Natural resource management is a long-term process, and it can take many years to achieve intended improvements in landscape function. In addition, our knowledge of natural systems and best practice in managing them continues to evolve, so natural resource managers need to continually adapt their actions to take account of new knowledge. The documentation of projects' expected long-term outcomes is important to help ensure projects stay on track over time. For example, it can help landholders and CMA field staff in continually managing towards those outcomes in the longer term as circumstances change.

The audit found that the Namoi CMA had documented expected long-term outcomes in the CAP and other strategic documents, including the investment strategies and the MERI Plans. These were consistent with each other.

Project records were well developed and showed improvement over time. The project files reflected the CMA's well developed project planning, management and monitoring procedures. Contract documents clearly recorded expected long-term outcomes and the linkages to CAP targets.

There was a common understanding between CMA staff and landholders of how project outputs and management actions contributed to long-term outcomes and CAP targets.

In respect to the Standard, the CMA:

- demonstrated it had clearly documented linkages between long-term outcomes and required management actions in project contracts (*Risk management, Determination of scale*)
- demonstrated there was a common understanding between staff and landholders of the logical relationships between project outputs, management actions and the long-term expected outcomes (*Determination of scale, Community engagement, Risk management*).

3.2 Successful achievement of project outcomes

CMAs' projects need to successfully achieve short-term changes in the way natural resources are managed in their region to maintain credibility with their communities, and create confidence in their investors. However, as CMAs often engage with their communities on the community's terms (at least initially), they also need to seek opportunities to add greater value to the projects proposed by landholders or other stakeholders.

The audit found that the Namoi CMA had successfully achieved robust project outputs in the projects inspected by the audit team. There were strong logic linkages between project outputs and the planned long-term outcomes.

The audit team also observed demonstrated changes in management practices and some changes in resource condition at the inspected project sites.

For example, in one project an area excluded from grazing clearly demonstrated improved groundcover and some evidence of shrub regeneration (Box 2.1). In another project there was evidence that project activities were improving water quality. Landholders in that project also reported both spatial and temporal increases in ground cover, an increase in resilience of their perennial pastures, a reduction in weed abundance and reduced erosion.

The CMA demonstrated it had established strong collaborative partnerships and was using these to maximise opportunities to add further value. Collaboration was targeted towards organisations with existing capacity such as the Cotton Cooperative Research Centre (CRC) and the Liverpool Plains Landcare Management Committee. Where the CMA engaged landholders directly, it tended to focus on the largest and most highly productive landholders. The focus on large-scale projects meant the CMA needed to undertake fewer projects to achieve its targets, thereby maximising efficiency (see Section 2.2).

Projects were also carefully designed to deliver outcomes that met the objectives of both the partner or landholder and the CMA (Box 3.1, Box 4.1).

In respect to the Standard the CMA:

- demonstrated the use of knowledge to develop sound logic assumptions linking outputs to management actions and long-term outcomes (*Collection and use of knowledge*)
- demonstrated the use of strong collaborative partnerships to deliver project outputs and maximise value (*Determination of scale, Community engagement, Opportunities for collaboration*).

Box 3.1: Millers Creek – Delivering significant short term outcomes by designing a project to meet the objectives of both the landholder and the CMA

The CMA needs to work closely with landholders with objectives that complement those of the CMA to take advantage of opportunities to achieve significant short-term outcomes that contribute to landscape resilience. The Millers Creek project demonstrates the importance of designing and implementing projects that address the overlapping objectives of landholders and the CMA. These projects deliver multiple outcomes and encourage landholders to make significant contributions toward achieving more resilient landscapes.

The owners of the Millers Creek project site wanted to reduce mustering costs and limit the potential for erosion in the large area of steeper country on their property. In 2007, they responded to CMA advertisements for funding available to protect riparian areas which would enable them to do this.

The property contained significant areas of remnant Eucalypt forest along the top of the range. The CMA recognised this was an opportunity to secure a valuable biodiversity asset as this remnant forest provided connectivity between areas of native vegetation in Cedar Brush and the Coolah Tops National Park. Preserving it would therefore assist to promote biodiversity in an area of the catchment well beyond the boundaries of the property itself.

(*Right: Some of the significant area of remnant Eucalypt forests that were fenced to exclude stock and are now managed for conservation*)

The CMA worked closely with the landholder to design a project that would meet the objectives of both parties.

The resultant project design featured over 10 km of fencing to exclude stock from 889 ha of the remnant Eucalypt forest. It also included some tree planting, new off-stream water points and additional fencing to protect 2.4 km of riparian areas on the property. During the project design the CMA staff identified a relatively rare native rainforest species of vine. Including stands of this vine in the preserved area further enhanced the achievements of the project.

Subsequent to the project the landholder commenced a training course to enhance his understanding of new grazing systems. He indicated that he was considering making further changes to his grazing practices that would enable him to extend protection to additional areas of the riparian zone.

(*Left: A sample of the relatively rare rain forest species of vine identified during the project design*)

3.3 Attraction of additional resources

To make the most of the small amount of funding CMAs have to invest in their regions, they need to look for opportunities to attract matching funding. They also need to encourage private landholders to make ongoing in-kind contributions, as this promotes resource stewardship and can increase the likelihood of landholders remaining committed to the success of the project over time.

The audit found that the Namoi CMA had attracted additional resources from landholders and project collaborators, including both monetary and in-kind investments.

The CMA had recorded the value of additional investment in its project files. However these figures reflected what had been negotiated in the initial contracts rather than what had actually been contributed over the project period. Project inspections indicated that in some cases the additional in-kind contributions had been underestimated. For example, in one project the landholders had undertaken significant revegetation activities over and beyond what was described in the project contract. However, in other projects landholders had made significant savings and this meant the recorded inputs were overestimated.

This indicated that while the CMA was attracting additional resources the extent of the resources was not always being accurately recorded.

In respect to the Standard, the CMA:

- demonstrated it had attracted additional resources to its investments and promoted community awareness of appropriate cost sharing (*Opportunities for collaboration, Community engagement*)
- could not demonstrate it had accurately collated and recorded the extent of the additional resources attracted (*Monitoring and evaluation, Information management*).

3.4 A system to track ongoing achievement of projects

Long-term projects to encourage resource stewardship need monitoring – particularly given the significant time lapses between investments and resulting improvements in resource condition, the gaps in our understanding of how to manage dynamic natural systems, and the unavoidable flux in social, economic and climatic conditions. Investors require reliable information that short-term targets have been met, and progress towards longer term objectives is being made.

The audit found that the Namoi CMA had established a comprehensive MERI system to track ongoing achievements of project outcomes. The system was described in the CAP but its implementation had initially been delayed until 2007 due to difficulty in identifying and employing an appropriately qualified MERI officer.

Once a suitable staff member was employed, the MERI strategy was finalised and implementation had commenced. The CMA had established a timeline with the goal of May 2010 for full implementation of the system. Projects inspected during the audit showed that monitoring points had been established and some project files contained detailed monitoring records. However, the MERI system did not incorporate monitoring project completion and delivery of project outputs.

In most projects inspected, the delivered project outputs were not fully in accordance with the project design. In general, the adjustments had been made during construction to improve functionality, reduce the cost of construction or accommodate adverse weather conditions such as drought. In these cases, landholders and staff agreed that adjustments had been made by negotiation with costs and benefits being offset against each other. In some projects inspected the delivery of outputs had simply been delayed.

Project files did not clearly record these changes to outputs and project completion reports typically referred to the design outputs. This meant that reporting of outputs was inaccurate and the lessons learned during project implementation were therefore not captured for use in designing future projects.

In respect to the Standard, the CMA:

- demonstrated it was implementing a comprehensive MERI system to monitor and report on project outcomes and evaluate the effectiveness of its investments (*Collection and use of knowledge*, *Monitoring and evaluation*, *Risk management*)
- could not demonstrate it had monitored outputs and captured lessons learned during project implementation that could improve project designs (*Collection and use of knowledge*, *Monitoring and evaluation*).

4. COMMUNITY ENGAGEMENT

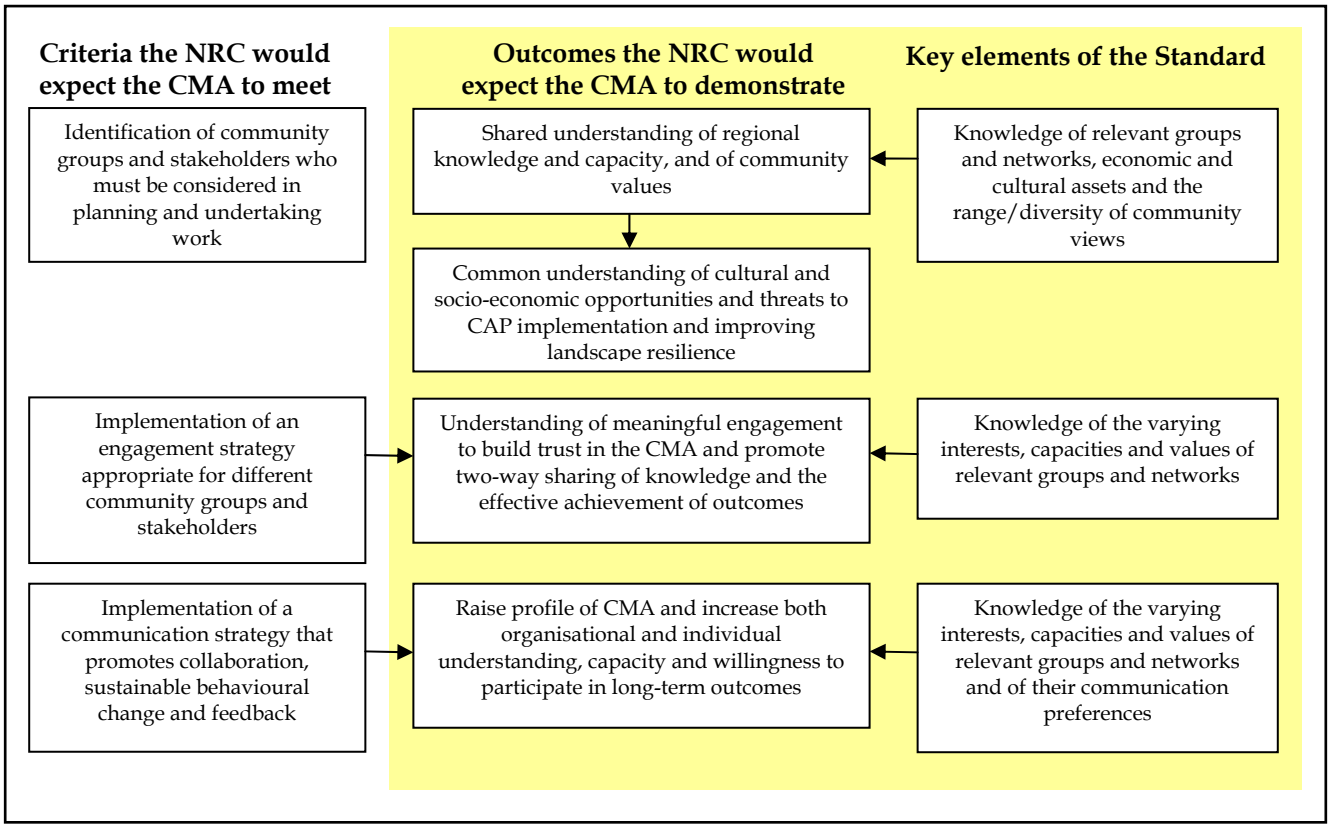
The audit's third line of inquiry was whether the CMA is effectively engaging its communities. Given that 89 per cent of land in NSW is in private management, it is critical for CMAs to engage private landholders and other stakeholders who manage the natural resources on this land. This allows CMAs to access the local knowledge of their communities, and understand the values placed on the natural resource assets in their region. It also enables them to influence how natural resources on private land are managed, and to maximise the effectiveness of government investment in NRM by establishing collaborative partnerships with landholders and other stakeholders, and strengthening the capacity of their communities.

The NRC identified three criteria that a CMA would be expected to meet in order to effectively engage its communities in compliance with the Standard. These criteria include that the CMA:

- has identified the community groups and stakeholders it must consider in planning and undertaking its work
- is implementing engagement strategies appropriate for different community groups and stakeholders
- is implementing a communications strategy that promotes collaboration, sustainable behaviour change and feedback.

Each of these criteria is shown on Figure 4.1, along with the key elements of the Standard for meeting it effectively, and the CMA behaviour and other outcomes the NRC would expect to see if the CMA was using those elements of the Standard.

Figure 4.1: The framework the audit team used to assess whether the CMA was effectively engaging its communities



The sections below discuss each criterion, including why it is important and what the audit found in relation to it.

4.1 Identification and analysis of community groups and stakeholders

A CMA's logical first step in engaging the community is to identify the key community groups and other stakeholders it must consider in planning and undertaking its work. To be effective, it also needs to understand these groups – for example, what they know about the natural resource assets and threats in the region, what is important to them, and to what extent they have the capacity to participate in NRM designed to improve landscape function. In addition, it needs to understand how these groups might present opportunities or pose threats to its ability to effectively implement the CAP and meet the catchment-level targets in the CAP. Developing and maintaining this kind of understanding requires systematic research and analysis.

The audit found that the Namoi CMA had identified the key stakeholders it must consider in planning and undertaking its work. The CMA had documented its key stakeholders in a number of reports and strategies including annual reports and the CAP, as well as reports commissioned by the CMA and undertaken by external consultants. Information about stakeholders and clients that had engaged with the CMA was stored in a central contracts database. This database was updated regularly and was accessible to most CMA offices and staff.

The CMA Board and staff had a shared understanding of community attitudes, capacity and values across the catchment. The CMA had commissioned a number of reports to develop and maintain this understanding including external evaluations of CMA performance and a comprehensive socio-economic benchmarking study. The CMA intended to repeat the benchmarking study every 2-5 years to continually update the CMA's knowledge of socio-economic conditions in the catchment. However, at the time of the audit only a small number of the recommendations from existing reports had been considered and the findings had not been used to inform planning processes.

The CMA Board and staff recognised that partnerships and strong associations with key stakeholders are essential to delivering the CAP. The CMA had targeted selected players in NRM in its catchment to develop capacity, share knowledge and identify opportunities and threats to CAP implementation. This included major industries, local government and indigenous communities.

In respect to the Standard, the CMA:

- demonstrated a good understanding of community groups and stakeholders across the catchment including their capacity, attitudes and values (*Collection and use of knowledge*, *Determination of scale*)
- demonstrated it had processes in place to develop and maintain this knowledge over time (*Collection and use of knowledge*, *Monitoring and evaluation*)
- had not demonstrated it had fully considered or incorporated findings and recommendations from existing reports (*Collection and use of knowledge*, *Risk management*, *Monitoring and evaluation*).

4.2 Appropriate engagement strategies for different community groups and stakeholders

Most regions of NSW include a variety of communities, community groups and other stakeholders, which the CMA should consider in planning and undertaking its work. These groups have different knowledge and capacity for NRM, and value the region's natural resources in different ways. For example, they might include rural communities, farmers and graziers, urban communities, Landcare groups, mining companies, tourism operators, local councils, relevant government agencies and other government institutions.

To effectively engage these diverse groups, a CMA needs to use its understanding of each group to develop an appropriate strategy for productive engagement. This requires strategic thinking, risk management and processes to identify and fill knowledge gaps.

The audit found that the Namoi CMA's Engagement Strategy, in conjunction with its other related education, partnerships and communication policies and strategies, outlined the aims and objectives of the CMA's engagement activities, identified key stakeholders and target groups and described the reasons for engaging with them.

The CMA implemented these strategies through various approaches including reference groups with local government and the catchment's Aboriginal communities. The CMA had also established strong collaborative partnerships with key industry groups with existing financial and organisational capacity to deliver on-ground outcomes and increase the efficiency of CMA investments (see Box 4.1). These approaches demonstrated a meaningful understanding of engagement, delivered better NRM outcomes, built trust and capacity and promoted the two-way sharing of knowledge.

The CMA had engaged with local government through the Namoi Local Government Group (NLGG) for operational issues and the Namoi Regional Organisation of Councils (NROC) for more strategic and policy related issues. However, the division of roles between these two groups was unclear to stakeholders. The CMA had not engaged councils on how to effectively integrate CAP objectives into council strategic planning processes and documents, such as Local Environment Plans (LEPs).

The CMA had undertaken issue specific engagement activities at the local level, through incentive programs and education activities targeted at schools and urban communities. However, the CMA had consciously not made broader 'grass roots' engagement and capacity building a high priority due to constraints around timing, staff resources, funding and reporting requirements.

The CMA had made a conscious decision to maximise efficiency of its investments. In order to achieve this it focussed on delivering outcomes through a highly targeted selection of stakeholders that demonstrated strong capacity to engage. However, as a consequence it was not fully utilising existing networks and expertise within the catchment, such as community groups and prominent land care groups. This narrow focus could impact on its credibility at the local level, limit its ability to identify and respond to emerging issues in the catchment and restrict its capacity to engage more broadly in the future.

In respect to the Standard, the CMA:

- demonstrated it had appropriate strategies to engage key stakeholders to extend investment, promote two-way sharing of knowledge and deliver on ground outcomes (*Collection and use of knowledge, Community engagement, Opportunities for collaboration, Determination of scale*)

- could not demonstrate it had fully utilised existing networks and expertise within the catchment to deliver outcomes that contribute to the CAP targets (*Opportunities for collaboration, Community engagement*).

Box 4.1: Cotton Collaborative Research Centre (CRC) – Effective partnerships delivering benefits for both parties

The Namoi CMA had effectively partnered with the Cotton CRC to access leading research and knowledge specific to the Namoi catchment, gain access to cotton growers and private land and efficiently deliver improved NRM outcomes on-ground.

Cotton is a significant industry in the Namoi catchment, representing almost 50% of the agricultural production in the Namoi valley. Collectively cotton growers control extensive lengths of the riparian zone of the Namoi River and are a major player in water management in the catchment.

The CMA targeted the cotton industry through the Cotton Catchment Communities CRC, (now known as the Cotton CRC) recognising it as an effective and efficient way to gain access to the industry and therefore also influence the management of NRM assets.

The CMA signed a partnership agreement with the Cotton CRC worth $4.8 million for the period of 2006-2009 (50:50 split). Under the agreement the CMA funded a catchment officer to work within the CRC research centre to provide an interface between the CMA and CRC. The CMA also funded the employment of a staff member to link directly with cotton growers through the Best Management Practice (BMP) Program. This involved undertaking certification audits, running workshops and supporting growers to develop on-ground projects.

The partnership raised the credibility of the CMA and awareness of NRM within the Namoi cotton community in a way that was industry-driven and non-threatening. The agreement enabled the CMA to access leading and regionally specific research, in areas such as surface and groundwater interactions and native vegetation, without funding it directly. It also enabled the CMA to efficiently and effectively achieve on ground outcomes such as revegetation and improved erosion control.

Equally the partnership brought significant benefits to the CRC. Their funding conditions stipulated that the researchers must prove extension of their research and adoption of newly developed techniques. The partnership enabled the CRC to communicate the results of research to the end users by incorporating the knowledge into the CMA's programs. The catchment officer position also facilitated a two-way sharing of information and built understanding of NRM issues within the CRC.

Many of the targets and outcomes of the original agreement had been exceeded. The CRC was able to deliver the works below cost and therefore had funds to reinvest in additional works. The CMA and CRC had signed a new agreement that will run until 2012 and continue the BMP and capacity building elements of the original partnership.

4.3 Communication promoting collaboration, behavioural change and feedback

CMAs are also required to lead their diverse communities in understanding natural resource management. To do this, they need sophisticated approaches to communicating their messages, and for hearing and

responding to the messages sent by communities. To capture the attention of diverse stakeholders such as Aboriginal communities, landholders, industry sectors, and urban and environmental organisations, their communication strategies need to reflect the varied values of their communities. This broad focus also helps to attract the widest possible funding and support across the region.

The audit found that the Namoi CMA's Communication Strategy was focussed on raising awareness of the CMA and CAP and promoting and protecting the CMA brand. The CMA was effectively implementing the strategy through a wide range of approaches including regular media releases and radio interviews, publications, advertising and high profile events. The CMA's TV commercials on indigenous NRM projects were of particular note. Feedback on these commercials demonstrated that they had raised awareness and understanding of collaborative projects and related NRM issues in both indigenous and non-indigenous communities.

The CMA website was another comprehensive communication tool that highlighted breaking news, provided current information to the community on upcoming events, and promoted involvement in programs and activities such as field days. The CMA was considering improvements to the website that would better facilitate a two-way flow of information with its community. These improvements included providing the capability for project participants to upload monitoring data to the CMA through the website and the distribution and collection of on-line surveys to gather feedback on CMA publications.

The CMA's communication activities were targeted and reflected the varied values of catchment communities. For example, the CMA delivered awareness campaigns, events and projects on urban sustainability. This was in response to identifying a lack of awareness of these issues in urban and peri-urban residents. Further, the CMA regularly developed and distributed regionally specific newsletters (i.e. "*Gunnedah Matters*", or "*Narrabri Matters*") that contained information about local projects and upcoming events, profiles on members of the local community and contact details for the local CMA office.

The Communication Strategy did not independently promote collaboration or sustainable behavioural change. However, it was designed to be read and implemented in conjunction with the Engagement Strategy and collectively they met these criteria.

The CMA had used a range of methods to increase organisational understanding and to get input from its community and key stakeholders. This included reference panels, consultative groups and attendance of key stakeholders at Board meetings. However, this was on an 'as need' basis only (for example, for feedback on the CAP) or was issue specific. This could constrain the ability of the CMA to draw on the knowledge of its community.

The CMA had sophisticated monitoring systems to track the effectiveness of communication activities. However, these processes had not been incorporated into the CMA's Monitoring, Evaluation, Reporting and Improvement (MERI) system and consequently it was unclear how this information was contributing to program planning.

In respect to the Standard, the CMA:

- demonstrated it had effectively implemented a strategy that raised the CMA's profile and used approaches that reflected the varied values of the community (*Community engagement*)
- could not demonstrate that it was systematically gathering feedback beyond an 'as need' or issue specific basis (*Collection and use of knowledge*).

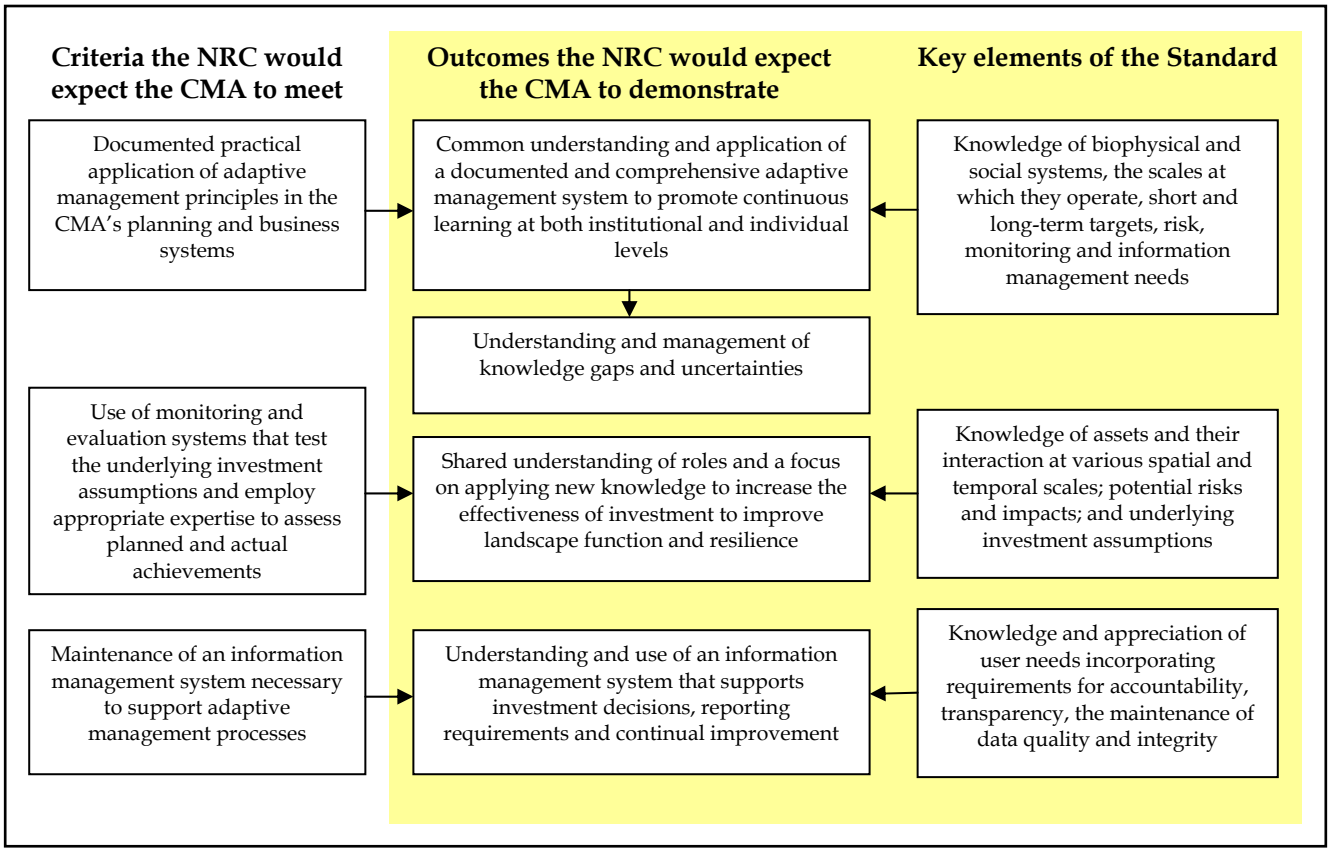
5. EFFECTIVELY USING ADAPTIVE MANAGEMENT

The audit's fourth line of inquiry assessed whether the CMA was effectively using adaptive management. It looked at whether the CMA:

- had documented the practical application of adaptive management principles to its planning and business systems
- had monitoring and evaluation systems that test its underlying investment assumptions and use appropriate experts to assess planned and actual achievements
- maintained information management systems necessary to support the adaptive management process.

Each criterion is shown on Figure 5.1, together with the elements of the Standard that are most relevant to meeting it effectively, and the CMA behaviour and other outcomes the NRC would expect to see if the CMA is using these elements of the Standard.

Figure 5.1: The framework the audit team used to assess whether the CMA was effectively using adaptive management



The sections below discuss each criterion in more detail, including why it is important and what the audit found in relation to it.

5.1 Adaptive management principles in planning and business systems

Adaptive management is 'learning by doing'. It is a structured, iterative process of decision-making that is intended to gradually reduce uncertainty and improve performance through monitoring, evaluation and response. It adds transparency and accountability to decision-making and the allocation of resources, while providing a framework for learning and ongoing improvement.

At a practical level, it is important that CMAs document, within their planning and business systems, how staff can apply adaptive management principles. This will help ensure their staff and collaborators can readily apply those principles in the many, diverse circumstances in which they work.

The audit found that the Namoi CMA had documented the principles of adaptive management in its planning and business systems. The CMA was effectively applying the 'plan', 'implement' and 'audit' stages of the adaptive management cycle.

The CMA had adopted an Environmental Management Systems (ISO 14000) approach to developing the CAP. This ensured that an adaptive management framework was integrated within the CMA's business systems. The framework was designed to effectively identify, measure, manage and control risks and impacts whilst establishing the means for improving performance and moving towards environmental sustainability.

The CAP clearly documents these adaptive management principles and states that preventative action, or continual improvement, will result from the analysis of the outcomes of internal systems reviews and external audits.

The CMA had an Internal Review process that was the basis for tracking and recognising opportunities for continuous improvement for the CMA, the CAP and for the environmental, economic and social performance of the catchment. The General Manager was responsible for managing the internal review process and reporting to the Namoi CMA Board on the effectiveness of policies and procedures.

The CMA relied heavily on external audits and reviews and had undertaken a wide range of studies including an external evaluation of its investment program. These evaluations demonstrated a commitment to continuous improvement of systems and procedures. Numerous recommendations for improvement had been made as a result. However, no formal register or process to monitor the response to these recommendations and ensure they resulted in improvements could be identified.

The CMA Board had established a Finance and Audit Subcommittee to consider all matters dealing with sound business practice. However, the Terms of Reference (TOR) for the Finance and Audit Committee were particularly limited and did not include the role of conducting internal audits.

There were differences between the Board and staff in understanding the roles and responsibilities for management of knowledge gaps and uncertainties. Staff expressed a view that adaptive management involved reviewing business processes and the results of those processes and indicated this was an operational matter. Evaluating and implementing recommendations from reports to achieve improvements was also described as operational. The Board's focus was largely on resource allocation and testing to see whether expenditure targets had been achieved.

The lack of clarity in relation to whether the CMA was effectively responding to the outcomes of reviews and evaluations, combined with the separation of the Board from the evaluation and review process, was

generating concerns at Board level as to whether lessons learned were being captured and changes implemented.

More rigour was needed in the implementation of the 'response' stage of the adaptive management cycle to ensure the system promoted continuous learning at both institutional and individual levels.

In respect to the Standard, the CMA:

- demonstrated that it had applied the Standard to incorporate the principles of adaptive management into its planning and business systems (*All Required Outcomes of the Standard*)
- could not demonstrate that it had implemented a clear strategy and consistent CMA-wide approach to respond to review outcomes and drive continual improvement in the organisation (*Information management*, *Monitoring and evaluation*).

5.2 Monitoring and evaluation system

To effectively apply adaptive management principles, CMAs' programs need to be designed and delivered in ways that facilitate structured learning. For example, investment programs need to record what changes to defined indicators are expected to result from the management actions within the program. Only then can CMAs undertake quantitative monitoring of these actions, and evaluate how successful they were in producing the expected changes.

It is not enough for a CMA to monitor and evaluate whether its projects have delivered the expected outputs (eg, that the expected quantity of native grasses were planted, or that the expected kilometres of fencing was installed). It also needs to test whether or not the assumptions about how each management action would lead to changes in landscape function were correct and so resulted in these changes (for example whether fencing and revegetation of a riparian zone resulted in improved water quality and riverine ecosystem health). In addition, the CMA needs to use experts with appropriate skills and knowledge in assessing its planned and actual results. This will allow it to apply new knowledge – gained from the monitoring and evaluation process and other sources – to increase the effectiveness of ongoing and future projects in improving landscape function and resilience.

The audit found that the Namoi CMA had described a comprehensive monitoring evaluation and review process in the CAP. This process included a plan to monitor outputs to evaluate whether best practice recommendations were effective and whether the CMA was achieving the intended physical change in the landscape. The CMA had also detailed its intentions to evaluate projects and programs in its investment programs and clearly described how Monitoring, Evaluation, Reporting and Improvement (MERI) information would impact planning.

Subsequently the CMA had developed a comprehensive MERI Strategy to drive the strategic and operational application of monitoring and evaluation. The MERI strategy clearly laid out the purpose and principles, as well as a description, of monitoring and evaluation of the CMA's business. This included the monitoring of the ongoing achievement of projects and testing of underlying assumptions. An example of a project where the CMA had invested in acquiring new knowledge through the testing of assumptions and monitoring of results is outlined in Box 5.1.

The CMA had begun implementing the MERI strategy. Baselines were being established and monitoring information collected and input in to the CMA's information system. Evidence of monitoring of resource

condition change was observed on project files and monitoring points were observed during site inspections. Monitoring resource condition change was being undertaken both at the landscape and property scale.

There was also evidence that new knowledge flowing from special purpose surveys and information flowing from experimental projects had been used to influence planning.

Monitoring data was being incorporated into the information system in line with the MERI implementation timeline. The inclusion of this data, in to what was already a comprehensive information base, meant that the CMA was well advanced in developing an information asset of significant value to all NRM asset managers in the catchment.

However, at this stage implementation of the MERI strategy was largely focussed on collection of biophysical data relating to changes in resource condition. The CMA had not yet incorporated data flowing from its other monitoring and evaluation processes as identified elsewhere in this report. These processes included the monitoring of project outputs, communication and media, risks and the lessons learned from reviews and evaluations.

This meant that the potential of the MERI system to inform continuous learning was still principally focussed on biophysical natural resource outcomes rather than overall CMA achievement.

In respect to the Standard, the CMA:

- demonstrated that it had established a comprehensive framework and was implementing a consistent approach to monitoring and evaluating the effectiveness of its investments (*Monitoring and evaluation*, *Collection and use of knowledge*, *Risk management*).

Box 5.1: Engineered Woodlands Project - testing underlying assumptions and acquiring new knowledge.

The CMA needs to take advantage of opportunities to test underlying assumptions and acquire new knowledge to increase the effectiveness of its investments in landscape resilience. The Engineered Woodlands project demonstrated the benefits of encouraging farmers to explore new management options within a framework that provides close technical support. The project also demonstrates effective adaptive management where the CMA's investment in an experimental project was providing access to new knowledge, testing underlying assumptions and promoting continuous learning at both institutional and individual levels.

The Northern Inland Regional Development Board had been promoting a forestry investment group as an experimental means of directing private investment towards farm forestry. The intention was to encourage the establishment of small-scale forestry projects in previously cleared farming and grazing areas.

One forestry project that had received investment from the forestry investment group was the Engineered Woodlands Project. This project consisted of six farm forestry sites in a range of land systems. This project had established 134 ha of forested area consisting of both native and other commercial forest species along the contours of grazing land.

The perceived benefits of the project included biodiversity enhancement, timber production, the sale of carbon offsets and maintenance of normal grazing. The CMA had recognised that this project could be

used to assess whether the investment could deliver the perceived benefits and provide learning for future similar projects. Therefore, the CMA had contributed funds to the project, to ensure that adequate support was available in the establishment phase to monitor the outcomes and rigorously test the underlying project design assumptions.

The forestry investment group formed a technical panel consisting of a farmer, an ecosystems scientist, an economist, a soil scientist and a local Landcare representative. The technical panel designed a monitoring system to collect comprehensive measurement of the results over the medium term.

The forestry investment group managed the regular collection of data and used both periodic technical investigations and landholder input. The technical panel assisted with the interpretation and evaluation of the results.

At the time of inspection forested areas had been established, the baseline measurements taken and the farmers trained in forestry maintenance, weed management and the systematic collection of data. Education programs for the farmers involved covered a range of ecosystem issues as well as an understanding of the potential carbon market.

Results obtained to date were encouraging and modelling suggests sufficient carbon can be sequestered to more than offset emissions from livestock grazing. However, it is too early to draw definitive conclusions and more work is required.

(*Left: Project participants on open grazing land with a successfully established small scale forestry trial site along the contour to the left*)

5.3 Information management systems that support adaptive management

CMAs need relatively sophisticated information management systems to support adaptive management. For example, these systems need to keep track of the changes in landscape function expected as a result of the management actions within a project and provide ready access to this and other necessary information when the project is being evaluated and decisions on improving its effectiveness are being made. These systems also need to keep track of new knowledge that is derived from the monitoring and evaluation process and other sources, so this can be used in making decisions.

The audit found that the Namoi CMA had demonstrated maintenance of a comprehensive information management system and collection of an extensive database of information capable of supporting adaptive management processes.

Upon establishment the CMA took the view that it urgently needed robust systems to manage its business prior to commencing investment activity. The CMA believed that it was unrealistic to expect that the agencies responsible for providing systems in support of CMAs would be able to deliver those systems within the required timeframe. Consequently, the CMA endeavoured to develop its own systems before focussing on the delivery of investments.

The CMA had established a sound filing structure for electronic and hard copy documents and implemented filing procedures, including naming protocols. A Contract Database to monitor and collate financial information, achievements towards management targets and key stakeholder contact details was also developed. This ensured that the CMA could readily produce commitment reports that clearly detailed the extent of funds committed and the progress towards targets. The database also provided CMA staff with access to up–to-date information regarding clients, contracts and funding to support contract management.

The CMA conducted skills and training audits to ensure existing staff skills were appropriately recognised and additional training needs were identified. Training programs were implemented to ensure good information management skills were maintained and this was supplemented by a register of staff training.

The CMA had commissioned external parties to undertake a series of data audits and reviews to seek out and tabulate both regional and local datasets. They also identified areas where there were deficiencies and gaps in the available data. This information had then been used to draw together key spatial data layers and build an interactive geographic information system (GIS) that was used to identify priority areas within the landscape. In 2009 an external data audit concluded that the CMA data library had developed to the point where it strongly supported most of the CAP targets and development-related themes. The CMA's Knowledge Products Register listed 69 products or datasets that had been identified or developed by the CMA for incorporation into the information management system. Many of these datasets had only been recently acquired or completed. This confirmed that the CMA had been actively investing in building its foundational knowledge for some time and was now beginning to reap the rewards.

The CMA recognised that there were still gaps in the available data and that the capacity of the system was being tested by the large quantity of data that was beginning to flow from the recently implemented MERI system. In response to this the CMA had scheduled the development of an information management strategy during 2009.

Financial systems had been adapted to ensure the Board received the information they needed in the format they required. All Board members indicated that they could readily obtain information when needed and this gave them confidence that the information management system supported investment decisions, reporting requirements and continual improvement.

In respect to the Standard, the CMA:

- demonstrated it had developed a comprehensive information management system that met the needs of the CMA and had a clear strategy for continued improvement of its information system, and the quality and integrity of the data (*Collection and use of knowledge*, *Determination of scale*, *Monitoring and evaluation*, *Information management*).

Attachment 1 Conclusions, suggested actions and CMA response

This Section provides a table summarising conclusions of the audit of the implementation of the Namoi CAP, the actions the audit team suggested the CMA take to improve this implementation and a summary of the Namoi CMA's response to the suggested actions. The CMA Board is expected to monitor the completion of these actions and the NRC may review these activities in future audit work.

Conclusion	Suggested actions	CMA response
Line of inquiry #1 – Has Namoi CMA effectively prioritised its investments to promote resilient landscapes that support the values of its communities?		
Criteria 1.1: *whether the CMA had a commonly understood definition of what constitutes resilient landscapes in their region* ▪ The CMA had a commonly understood definition of what constitutes resilient landscapes in the region. This understanding was expressed in the CMA's vision of "Vibrant communities and landscapes" and further explained in the environmental policy within the CAP. ▪ The CMA had undertaken a wide range of reviews and studies to build its scientific knowledge of landscape assets and threats. ▪ The CMA had recently developed a 'Resilient Landscapes Policy' but the development process had not utilised new data or included input from the Board or stakeholders in relation to emerging threats. Consequently the policy had not incorporated new knowledge to refine the common understanding of what constitutes resilient landscapes in the region.	The audit team suggests that the CMA take the following action: 1. Use its review of the CAP to consider emerging threats and other new data, to refine its common understanding of resilient landscapes in the region.	The Namoi CMA agrees with the suggested action. Namoi CMA is currently engaging in the NRC led CAP review process and is one of the two CMA's involved in this pilot process. The Namoi CMA will undertake this action in conjunction with the CAP review and expects to complete it by mid 2010.

Conclusion	Suggested actions	CMA response
Criteria 1.2: *whether the CMA had a system that ranked investment options, which incorporated the best available information and multiple CAP target achievement* ▪ The CMA had a clearly documented well defined system that ranks investment options and incorporates the best available information and multiple CAP target achievement. The CMA demonstrated a shared understanding of a transparent, consistent and repeatable system to rank investment options. However, prioritisation was predominantly based on biophysical assets and the CMA had not yet incorporated socio-economic data into its prioritisation to the same extent.	The audit team suggests that the CMA take the following action: 2. Reviewing its systems to rank investments to include consideration of community values and socio-economic data.	The Namoi CMA accepts the suggested action. Namoi CMA advises that it has utilised the findings of "Socio-Economic Assessment of the Namoi Catchment Action Plan" (CARE 2006) to guide its investment activity. Namoi CMA believes it has a comprehensive triple bottom line approach to ranking investments as outlined by procedures, decision support tools etc. Namoi CMA has explored many options to further improve its ranking processes, including becoming a pilot CMA in the Investment Framework for Environmental Resources (INFFER) trials run by UNE. The INFFER framework seeks to add socio-economic capacity to NRM investment prioritisation tools. Namoi CMA has also co-funded a scoping study to assess the use of micro-simulation modelling in relation to the socio-economic effects of Government policy initiatives. The Namoi CMA will complete the action by mid 2010.

Conclusion	Suggested actions	CMA response
Criteria 1.3: *whether the CMA had a system that that ensures short and long-term investment priorities are consistent with each other and integrated with other planned NRM targets* ▪ The CMA had systems that ensured short and long-term investments were consistent with each other and that these investments aligned with other planned targets.	There are no suggested actions for this criterion.	
Line of inquiry #2 – Have the Namoi CMA's vegetation projects contributed to improved landscape function?		
Criteria 2.1: *whether the CMA has documented expected long-term project outcomes* ▪ The CMA had documented expected long-term outcomes in the CAP and other strategy documents and these were consistent with each other. Project records were well developed and clearly documented expected long-term outcomes and the linkages between these and management actions. There was a common understanding between CMA staff and landholders of these outcomes and linkages.	There are no suggested actions for this criterion.	
Criteria 2.2: *whether the CMA successfully achieves project outcomes, and maximised opportunities to add further value* ▪ The CMA had successfully achieved robust project outputs and these had strong logic linkages to long-term outcomes. Demonstrated changes in management practices and some changes in resource condition were also observed. Together these indicated that achievement of long-term outcomes was likely. ▪ The CMA demonstrated it had established strong collaborative partnerships and was using these to maximise opportunities to	There are no suggested actions for this criterion.	

Conclusion	Suggested actions	CMA response
add further value.		
Criteria 2.3: *whether the CMA's projects are attracting additional resources to match CMA funding* ▪ The CMA had attracted additional resources from landholders and project collaborators and recorded the contracted contribution in project files. ▪ However, differences were noted between what had been negotiated during project design and what had actually been contributed during project delivery. These differences had not been quantified or recorded. Inspections identified projects where additional inputs had been underestimated and others where there were considerable overestimations. ▪ Consequently while it was apparent that the CMA had attracted additional inputs to match its investments the full extent of additional resources attracted by the CMA had not been accurately recorded.	The audit team suggests that the CMA take the following actions: 3. Develop a methodology that could be used to more accurately estimate and record additional resources contributed by stakeholders.	The Namoi CMA agrees with the suggested action. An improved methodology for accurately estimating and recording additional resources contributed by investment partners will be developed as an ongoing action. The Namoi CMA will complete the action by November 2009.
Criteria 2.4: *whether the CMA had a system to monitor ongoing achievement of project*: ▪ The CMA had established a comprehensive MERI system to track ongoing achievement of project outcomes. The CMA had commenced implementation and had established a timeline to fully implement the system by May 2010. However, the MERI system did not incorporate monitoring project completion and delivery of project outputs. ▪ In most projects inspected, project outputs had been adjusted by negotiation between the landholder and CMA staff. However, these changes were not recorded and the lessons learned	The audit team suggests that the CMA take the following actions: 4. Review the contract compliance process and link output monitoring to the MERI system to ensure lessons learned during implementation are captured and applied to future project designs.	The Namoi CMA agrees with the suggested action. Namoi CMA has reviewed the procedures and processes regarding monitoring and reporting of project outcomes. The Namoi CMA has completed this suggested action.

Conclusion	Suggested actions	CMA response
during implementation were therefore not captured for use in future project designs.		
Line of inquiry #3 - Has the Namoi CMA effectively engaged its communities?		
Criteria 3.1: *whether the CMA has identified community groups and stakeholders it must consider in planning and undertaking work* ▪ The CMA had identified the key stakeholders it must consider in planning and undertaking its work in numerous documents. These documents included internal policies and strategies as well as reports commissioned by the CMA. ▪ The CMA Board and staff had a shared understanding of community attitudes, capacity and values across the catchment. The CMA had commissioned a number of studies to further develop this understanding and to identify opportunities for partnerships. However only a small number of the recommendations in these reports had been considered to date and the findings and recommendations had yet to inform planning processes. ▪ The CMA Board and staff recognised that partnerships and strong associations with key stakeholders are essential to delivering the CAP. The CMA had targeted selected players in NRM in its catchment, including major industries, local government and indigenous communities, to develop capacity, share knowledge and identify opportunities and threats to CAP implementation.	The audit team suggests that the CMA take the following actions: 5. Using the CAP review to fully consider findings and recommendations from reports it commissioned to increase understanding of its community and stakeholders and identify opportunities for partnerships.	The Namoi CMA agrees with the suggested action. Namoi CMA advises that it will use the CAP review process to implement findings and recommendations from reports it has commissioned. Namoi CMA is also building an internal register of report findings and recommendations that will be regularly updated. The Namoi CMA will complete this register by November 2009.
Criteria 3.2: *whether the CMA is implementing an engagement strategy appropriate for different community groups and stakeholders*	The audit team suggests that the CMA take the following actions:	The Namoi CMA agrees with the suggested actions. The Namoi CMA advises that it established the

Conclusion	Suggested actions	CMA response
▪ The CMA's Engagement Strategy, and other associated documents, outlined the aims of the CMA's engagement activities, identified key stakeholders and target groups and the reasons for engaging with them. ▪ The CMA was implementing the strategy through various sophisticated approaches that demonstrated a meaningful understanding of engagement. Community engagement had delivered better NRM outcomes, built trust and capacity, promoted two-way sharing of knowledge and provided benefits to both the CMA and the community. The CMA had also undertaken issue specific engagement activities at the local level through incentive programs and education activities. However, broader (or grass roots) engagement had not been a high priority at this stage. ▪ Consequently, the CMA had not fully utilised existing networks and expertise within the community to deliver outcomes that contribute to the CAP targets. This could impact on its credibility at the local level, limit its ability to identify and respond to emerging issues in the catchment and restrict its capacity to further engage. ▪ The CMA participated in two local government representative groups: the NLGG (to deliver NRM projects) and NROC (to deal with broader policy issues that affect the catchment). The division of roles of the two groups was unclear to stakeholders. The CMA had not engaged councils on the broader issue of how to effectively integrate CAP objectives into council strategic planning processes.	6. Clarify the division of roles of the two local government groups with stakeholders. 7. Use the two local government groups to explore how best to effectively integrate CAP objectives into council strategic planning processes.	NLGG in 2005 and was involved in the Namoi Regional Organisation of Council's establishment. Namoi CMA is a member of the Namoi ROC. While Namoi CMA has spent considerable time and effort clarifying the roles of the two local government groups in the Namoi the interaction between the two groups remains undefined as does stakeholder interaction with both groups. Clarification of roles is also a responsibility accepted by the Namoi ROC and is under active consideration. Namoi CMA has comprehensively, at policy and operational levels, engaged with both groups in how best to effectively integrate CAP objectives into local government strategic planning processes. It remains the case that councils have difficulties with integrating CAP objectives into their plans and strategies at this point in time. The Namoi CMA will continue to pursue the outcomes of the suggested actions.

Conclusion	Suggested actions	CMA response
Criteria 3.3: *whether the CMA is implementing a communications strategy that promotes collaboration, sustainable behavioural change and feedback* ▪ The CMA's Communication Strategy focuses on raising awareness of the CMA, CAP targets and NRM issues within the community and promoting and protecting the CMA brand. The CMA is effectively implementing the strategy through a range communication tools that focus primarily on providing information to the community through media, publications and events. The CMA's communication activities are targeted and reflect the varied values of catchment communities. ▪ The Communication Strategy did not independently promote collaboration or sustainable behavioural change. However, it was designed to be read and implemented in conjunction with the Engagement Strategy and collectively they met these criteria. The CMA had used a range of methods to increase organisational understanding, get input and gather feedback from its key stakeholders and the community. However this was usually on an 'as needed' (e.g. feedback on the CAP) or issue specific basis only. ▪ The CMA had sophisticated monitoring systems to track the effectiveness of its communication activities. However this monitoring process had not been incorporated into the CMA's MERI system.	The audit team suggests that the CMA take the following actions: 8. Incorporate the communications monitoring process into the CMA's MERI system.	The Namoi CMA agrees with the suggested action. Namoi CMA advises that it has commissioned the development of a communications monitoring database that will be linked with the existing investment contract database. This will subsequently provide ongoing data into Namoi CMA's MERI system. The Namoi CMA will complete the action by November 2009.

Conclusion	Suggested actions	CMA response
Line of inquiry #4 - Has the Namoi CMA effectively used adaptive management?		
Criteria 4.1: *whether the CMA had documented the practical application of adaptive management principles in its planning and business systems* ▪ The CMA had clearly and consistently documented the principles of adaptive management in its planning and business systems. The 'plan', 'implement' and 'audit' stages of the adaptive management cycle were being applied effectively. ▪ However, there was a lack of certainty as to whether the outcomes of reviews were being implemented. There were also differences between the Board and staff in the understanding of roles and responsibilities for management of knowledge gaps and uncertainties. ▪ This weakness in the implementation of the 'response' stage of adaptive management reduced the CMA's ability to promote continuous learning at both institutional and individual levels.	The audit team suggests that the CMA take the following actions: 9. Develop and implement a robust internal audit process at Board level that would enable the CMA to continually test its response to the outcomes of reviews and promote continuous learning at the institutional level.	The Namoi CMA accepts the suggested action. The Namoi CMA notes that the Board and senior management constantly review all components of the Namoi CMA adaptive management system. All suggested improvements are appraised. The Namoi CMA will complete the action by mid 2010.

Conclusion	Suggested actions	CMA response
Criteria 4.2: *whether the CMA had monitoring and evaluation systems that test underlying investment assumptions and employ appropriate expertise to assess planned and actual achievement* ▪ The CMA had developed a comprehensive MERI Strategy to drive the strategic and operational use of monitoring and evaluation. The MERI strategy clearly laid out the purpose and principles as well as a description of monitoring and evaluation of the CMA's business including the ongoing achievement of projects. ▪ Implementation of the strategy had begun, baselines were being established and monitoring information was being collected and input into the information system. The inclusion of this data, into what was already a comprehensive information base, meant that the CMA was well advanced in developing an information asset of significant value to all managers of NRM assets in the catchment. ▪ However, at this stage implementation was largely focussed on collection of biophysical data relating to changes in resource condition. Other monitoring and evaluation processes already being undertaken by the CMA, such as monitoring of project outputs, communication and media, risks and review outcomes had not yet been linked to the overall MERI system.	The audit team suggests that the CMA take the following action: 10. Review and update the MERI strategy and the MERI implementation timeline to ensure that all monitoring and evaluation processes are included and prioritised for implementation. These processes would include, but not be limited to, monitoring of project outputs, communication and media, risks and the lessons learned from reviews and evaluations highlighted elsewhere in this report.	The Namoi CMA agrees with the suggested action. Namoi CMA advises that it is constantly reviewing and updating the MERI strategy and in particular has recently completed a review of the "People" target program logics and developed an improved set of indicators for these targets. Namoi CMA is developing a database that will store information regarding the monitoring of engagement and communication activities. The Namoi CMA will complete the action by November 2009.
Criteria 4.3: *whether the CMA maintained an information management system necessary to support adaptive management* ▪ The CMA demonstrated maintenance of a comprehensive information management system and collection of an extensive database of information capable of supporting adaptive management processes. While there were still some gaps in	There are no suggested actions for this criterion.	

Conclusion	Suggested actions	CMA response
the available data and a need to grow the capacity of the system, CMA management had recognised this and scheduled the development of an information management strategy during 2009.		

Attachment 2 About this audit

Audit mandate

The NRC is required to undertake audits of the effectiveness of the implementation of catchment action plans (CAPs) in achieving compliance with those State-wide standards and targets as it considers appropriate.[2]

The NRC contracted the Institute for International Development (IID) to undertake the audit of the implementation of the CAP prepared by the Namoi Catchment Management Authority (CMA). The NRC also contracted IID to undertake the audits of Lachlan CMA and Murrumbidgee CMA.

The NSW Government has adopted an aspirational goal to achieve resilient landscapes that support the values of its communities.[3] It intends to achieve this by encouraging natural resource managers, such as each CMA, to make high quality decisions, focused through a coherent set of targets.[4] The NSW State Plan [5] establishes the State-wide targets for natural resource management (NRM).

CMAs have developed CAPs that express how each specific region can contribute to the aspirational goal and the State-wide targets. The *Namoi Catchment Action Plan*[6] identifies the key natural resource issues (or themes) that need to be managed in the region, including People and Their Communities, The Landscape, Surface and Ground Water Ecosystems and Native Plants and Animals. Within each of these themes, the CMA has identified:

- catchment targets, for longer term improvements in resource condition that will contribute to achievement of the State-wide targets
- management targets, which identify shorter term investment priorities that will contribute to achievement of the resource condition targets.

Audit objective

This audit assessed the effectiveness of Namoi CMA in promoting resilient landscapes that support the values of its communities, within the scope of the CAP.

Namoi CMA is now implementing the CAP, through a mix of programs and projects that simultaneously contribute to more than one management target, and more than one resource condition target. Many of these integrated programs and projects use vegetation to enhance landscape function, to lead to the aspirational goal of resilience.

Lines of inquiry

- In order to assess the effectiveness of CMA work, the NRC directed the audits to answer the following questions:
- Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
- Are the CMA's vegetation projects contributing to improved landscape function?
- Is the CMA effectively engaging its communities?
- Is the CMA effectively using adaptive management?
- The NRC identified that these four key aspects of CMA work should strongly influence effectiveness in achieving resilient landscapes, and promote maximum improvement for Namoi CMA for this stage in their development.

Audit criteria

To help answer each line of inquiry, the NRC formulated the criteria identified below in Table 1, the audit plan summary.

These criteria address:

2 *Natural Resources Commission Act 2003, Section 13 (c)*
3 As recommended by the NRC in *Recommendations – State-wide standard and targets, September 2005*.
4 *Ibid*
5 See Priority E4 in, NSW Government (2006) *A new direction for NSW, NSW Government State Plan*, November 2006
6 Namoi CMA, *Namoi Catchment Action Plan, 2007*

- expected documentation of the particular key aspect of CMA work
- expected implementation of plans and decisions
- expected evaluation and reporting of the performance of the CMA work.

The criteria were derived from the elements of each line of inquiry, and from the general criteria of the Standard and state-wide targets.

The NSW Government adopted the *Standard for Quality Natural Resource Management* (the Standard), which identifies seven components that are commonly used to reach high quality natural resource decisions. CMAs must comply with the Standard[7], using it as a quality assurance standard for all planning and implementation decisions.

Audit scope

As a sample of the entire range of NRM investments, the audit work was focused on CMA programs and projects that use vegetation to improve landscape function.

The NRC considered this to be the appropriate focus as vegetation remains a key tool for CMAs to use to achieve integrated NRM outcomes. This is due to a number of factors, including the lack of certainty in the management framework for other aspects of NRM such as water.

As most NRM programs and projects contribute to more than one NRM target, the NRC expects audited projects to also contribute to other targeted outcomes, such as river health and threatened species. The audit sought to audit the effectiveness of these contributions as they arise.

Audit approach

In August 2009, the audit team performed the following audit work:

- interviewing a number of CMA Board and staff members, landholders and stakeholders external to the CMA
- reviewing a range of CMA and public documents
- visiting multiple sites on five projects.

At the close of the audit field work, the audit team shared preliminary observations with the CMA.

Audit methodology

To plan and conduct this audit, the audit team followed the methodologies set out in the *Framework for Auditing the Implementation of Catchment Action Plans,* NRC 2007.

Acknowledgements

The audit team gratefully acknowledges the cooperation and assistance provided by the Namoi CMA and landholders in the Namoi region. In particular we wish to thank the Namoi CMA Board, the General Manager (Mr Bruce Brown) and Program Manager - Operations (Mr Matthew Davidson).

[7] Section 20 (c), *Catchment Management Authorities Act, 2003*

Table 1. Audit plan summary

Line of Inquiry 1	Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
This line of inquiry was tested against the following criteria:	
Criterion 1.1	The CMA has a commonly understood definition of what constitutes resilient landscapes in their region.
Criterion 1.2	The CMA has a system that ranks investment options, which incorporates factors including scientific and local knowledge, socio-economic information, community and investor preferences, leverage of investment and multiple CAP target achievement.
Criterion 1.3	The CMA has a system that ensures short and long-term investment priorities are consistent with each other and integrated with other planned NRM targets.
Line of Inquiry 2	**Are the CMA's vegetation projects contributing to improved landscape function?**
This line of inquiry was tested against the following criteria:	
Criterion 2.1	The CMA has documented expected long-term project outcomes.
Criterion 2.2	The CMA is successfully achieving project outcomes, and maximising opportunities to add further value.
Criterion 2.3	The projects are attracting additional resources to match CMA funding.
Criterion 2.4	The CMA has a system to monitor ongoing achievements of projects.
Line of Inquiry 3	**Is the CMA effectively engaging its communities?**
This line of inquiry was tested against the following criteria:	
Criterion 3.1	The CMA has identified community groups and stakeholders it must consider in planning and undertaking work.
Criterion 3.2	The CMA is implementing an engagement strategy appropriate for different community groups and stakeholders.
Criterion 3.3	The CMA is implementing a communication strategy that promotes collaboration, sustainable behavioural change and feedback.
Line of Inquiry 4	**Is the CMA effectively using adaptive management?**
This line of inquiry was tested against the following criteria:	
Criterion 4.1	The CMA has documented the practical application of adaptive management principles in its planning and business systems.
Criterion 4.2	The CMA has monitoring and evaluation systems that test underlying investment assumptions and employ appropriate expertise to assess planned and actual achievement.
Criterion 4.3	The CMA maintains an information management system necessary to support adaptive management processes.

Attachment 3 The CMA and its region

CMAs have a challenging task to encourage communities across their particular regions to improve how they manage natural resources on private land for the benefit of the landholders, the broader community and future generations.

This section provides context for the audit by summarising key features of the Namoi region and Namoi CMA. This context is important in considering both the way in which a CMA's effectiveness should be assessed and the options for improving that effectiveness.

The region at a glance

The Namoi catchment has an area of approximately 42,000 square kilometres. The catchment is located in the north west of NSW and is bounded by the Great Dividing Range in the east, the Liverpool Ranges and the Warrumbungle Ranges in the south and the Nandewar Ranges and Mt Kaputar in the north[8] (see Figure A3.1). Stretching from Woolbrook in the east to Walgett on the western boundary the catchment is over 350 kilometres long.[9]

The Namoi catchment supports a diversity of landscapes, ranging from the Liverpool, Warrumbungle and Kaputar Ranges, all of which include National Parks, through the rolling hills of the sedimentary slopes to the open floodplains of the Liverpool Plains and Darling Riverine Plains in the western part of the catchment.[10] The broad vegetation types include forests, woodlands, riverine communities, shrublands, heaths and grasslands.[11]

Approximately 100,000 people live in the catchment, mainly along the Namoi River and its tributaries between Tamworth and Narrabri. Major tributaries of the Namoi River include Cox's Creek and the Mooki, Peel, Cockburn, Manilla, and Macdonald Rivers, all of which join the Namoi upstream of Boggabri.[12]

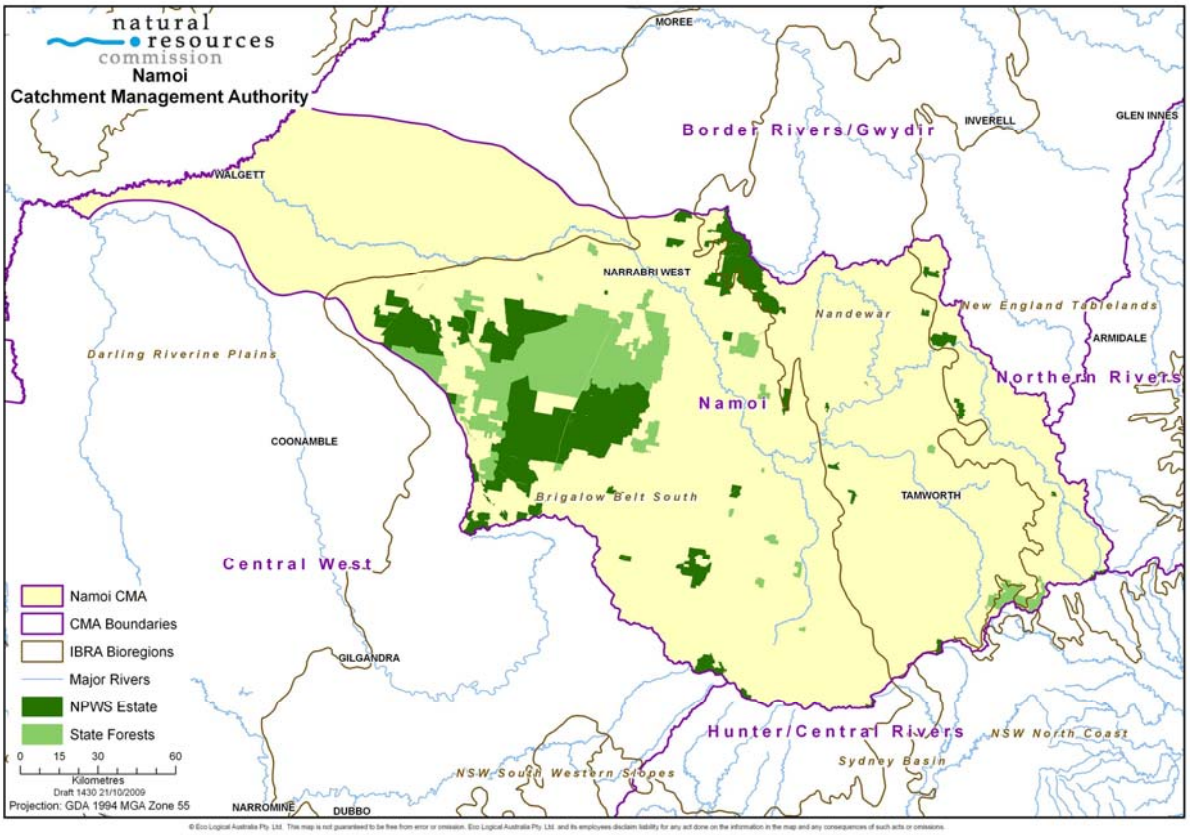
There are 12 local land councils in the catchment, which represent some 6,500 Aboriginal people.[13]

Agricultural production enterprises represent approximately half of the Namoi annual regional output of over A$1 billion. This is around 11% of NSW's on farm production from only 6.25% of the State's area.[14] The major agricultural industries include cotton production, livestock, poultry, grain and hay and other horticulture. Cropping and pasture growth takes place all year round.[15]

A range of land and water management issues affect the Namoi catchment including water quality decline, soil and land degradation, increasing dryland salinity, loss of native vegetation and biodiversity.[16] One of the greatest challenges for Namoi CMA will be to balance the economic development pressures with improvements to the sustainability of the catchment's natural resource base.[17]

[8] Namoi CMA 2008, Namoi Annual Report 2007/08
[9] Namoi CMA website, http://www.namoi.cma.nsw.gov.au/, accessed 15 July 2009
[10] Namoi CMA 2007, Namoi Catchment Action Plan Part B
[11] Namoi CMA 2009, http://www.namoi.cma.nsw.gov.au/namoi_cma_lmu_map_2009.pdf
[12] see footnote 8
[13] see footnote 7
[14] see footnote 8
[15] see footnote 7
[16] see footnote 8
[17] see footnote 7

Figure A3.1: Namoi region[18]



The CMA at a glance

The head office of the Namoi CMA is situated in Gunnedah and there are also offices located in Narrabri, Quirindi, Tamworth and Walgett.

At the time of the audit, the Board consisted of Jim McDonald (Chair) and five Board members. The Board has two sub-committees: Risk and Audit, and Policy. The Board receives input from the Namoi Local Government Group (which is made up of six of the seven Local Councils and the CMA), the Namoi Aboriginal Advisory Committee and the Upper Mooki Reference Committee.

The CMA management team comprises the General Manager, Business Manager and two Program Managers (Strategy & Planning) and Operations.[19]

In the last financial year Namoi CMA invested $15.058 million in natural resource management activities throughout the Namoi catchment designed to achieve to significant landscape change. These outcomes were achieved by engaging the regional community in key natural resource management issues.[20]

The amount of additional resources attracted against investment as reported by the CMA is shown in Table A3.1.

[18] Map of region provided by the NRC
[19] See footnote 7
[20] *ibid*

Table A3.1 Additional resources matched against investment[21]

Investment Period	Invested Amount ($ mil)[22]	Additional Resources ($ mil)[23]
2006/07	$15.284	$10.00
2007/08	$15.305	$6.86
2008/09	$9.266	$5.82

[21] Figures provided by the CMA in response to the Draft Audit Report 20 September 2009.
[22] The sum of Category 2 (NSW and Federal Government) and Category 3 (all other sources) funding including interest. This figure excludes Category 1 (recurrent expenditure) funding.
[23] The methodology used by the CMA to estimate this amount is discussed in section 3.3 Attraction of Additional Resources.