# *INVESTMENT PLANNING UNDER REGIONAL NRM DELIVERY*

## *Current processes and issues in three NSW regions*

*Working Paper 1 from the project 'Improving economic accountability when using decentralised, collaborative approaches to environmental decisions'*

Graham R. Marshall

Institute for Rural Futures,
University of New England, Armidale

October 2008

# GLOSSARY

| | |
|---|---|
| BRGCMA | Border Rivers – Gwydir Catchment Management Authority |
| CAP | Catchment Action Plan |
| CERF | Commonwealth Environmental Research Facilities |
| CfOC | Caring for Our Country |
| CMA | Catchment Management Authority |
| ICM | integrated catchment management |
| NCMA | Namoi Catchment Management Authority |
| NRCMA | Northern Rivers Catchment Management Authority |
| NRM | natural resource management |
| PMP | property management planning |

# ACKNOWLEDGEMENTS

The research documented in this working paper was funded by the Australian Government's Commonwealth Environmental Research Facilities (CERF) program. Cooperation from various staff and board members of the Border Rivers – Gwydir Catchment Management Authority, Namoi Catchment Management Authority, and Northern Rivers Catchment Management Authority in participating in the meetings and interviews undertaken for this 'scoping' stage of the project, and in reviewing drafts of their respective sections of this working paper, is greatly appreciated. Support from Drs Judy McNeill and Ian Reeve in conducting the meetings and interviews is also gratefully acknowledged. Nevertheless, all errors in this document remain the responsibility of the author, and the views and judgements expressed do not necessarily reflect those of the Australian Government or the participating Catchment Management Authorities.

# ABOUT THE AUTHOR

Graham Marshall is Program Manager: Economics, Environment and Institutions, at the Institute for Rural Futures, University of New England, Armidale, NSW 2351. He can be contacted by telephone on 61 2 67733250 or by email on gmarshal@une.edu.au

Graham's recent and forthcoming publications include the book 'Economics for Collaborative Environmental Management: Renegotiating the Commons' (Marshall 2005), the book chapter 'Can community-based NRM work at the scale of large regions? Exploring the roles of nesting and subsidiarity' (Marshall, in press a), the report 'Community-based regional delivery of natural resource management: Building system-wide capacities to motivate voluntary farmer adoption of conservation practices' (Marshall, in press b), and journal articles 'Understanding and promoting adoption of conservation technologies by rural landholders' (Pannell, Marshall et al. 2006), 'Nesting, subsidiarity and community-based environmental governance beyond the local level' (Marshall 2008), and 'Polycentricity, reciprocity, and farmer adoption of conservation practices under community-based governance' (Marshall, in press c).

# TABLE OF CONTENTS

# LIST OF TABLES

# 1. INTRODUCTION

The project *Improving economic accountability when using decentralised, collaborative approaches to environmental decisions* seeks to develop and test a method that is feasible and useful for community-based natural resource management (NRM) organisations to apply in demonstrating the quality of their decisions from an economic perspective. The need for enhanced accountability of this kind is highlighted by the Australian National Audit Office's report on the regional delivery model (ANAO 2008), as well as by the Australian Government's new NRM program ('Caring for Our Country') – from which funding for this model will mainly be drawn – intending to 'take a business approach to investment' which involves, among other things, 'choos[ing] the most efficient and effective ways of taking action …' (Australian Government 2008).

Nevertheless, economists have struggled in developing methods of economic evaluation that are consistent with stated reasons for adopting collaborative community models of environmental governance (Marshall 2005). These reasons include (i) closer matching of investment decisions to local values, socio-economic conditions and environmental circumstances; (ii) increased community empowerment and ownership (including via strengthening elements of social capital including trust and reciprocity); (iii) closer integration of solutions to interdependent problems; and (iv) enhanced adaptive capacity. They have struggled too in developing methods that are feasible to apply given the resourcing constraints and decision timelines faced by regional bodies. Hence, the present project seeks to develop a cost-effective method of economic evaluation more 'in tune' with the rationale of the regional delivery model.

The present project seeks to develop and test an economic method in partnership with three of the community-based regional NRM organisations in New South Wales (NSW) funded by the Australian and NSW Governments. These three organisations are: Border Rivers – Gwydir Catchment Management Authority (CMA); Namoi CMA; and Northern Rivers CMA. Given the focus of the project on developing a method that is feasible and useful for organisations like these to apply, an early step of the project was to understand the context of decision-making for each of these bodies and how each of them actually goes about making investment and related institutional decisions given this context.

This working paper presents the findings of this 'scoping' exercise in respect of each of the NRM regions under the jurisdiction of the three partner regional bodies. These findings are based on research involving examination of the Catchment Action Plans and investment programs developed by these CMAs, other documentation, and also on information provided at various meetings and interviews with CMA staff and board members. The focus of the scoping exercise was on how investment planning processes in these three regions have managed to deliver the kinds of advantages from community-based NRM that this approach to natural resource governance has been expected to deliver. Hence, particular attention was paid to how investment planning processes addressed needs for community capacity building and for integrated catchment management. In addition, the exercise explored how the three partner organisations have utilised structured decision-making frameworks, including those with economic content, in their investment planning processes to date.

The three CMAs acting as partners in this project are a subset of the 13 statutory authorities established by the NSW Government under the *Catchment Management Authorities Act 2003* to coordinate NRM within a designated region. The Board of each CMA in NSW comprises a Chair and six independent members from the community chosen for their collective skills and experience to contribute to sound

natural resource decision-making and corporate governance. These three CMAs also form a subset of the larger group of 56 regional NRM bodies funded by the Australian Government and relevant state/territory governments under the regional delivery model. Arrangements for regional NRM delivery vary considerably across the states and territories:

> … from institutional models with high levels of community empowerment to those where State Government agencies retain full responsibility for all statutory functions … There is also inconsistency between states in the name given to the regional NRM bodies. They are called Catchment Management Authorities in New South Wales and Victoria, Catchment Councils in Western Australia, Natural Resources Management Boards in South Australia, Regional NRM Groups in Queensland and Regional Committees in Tasmania' (Pannell et al. 2008 p. 1).

Clearly, the three regional bodies serving as partners in this project represent a small proportion of all the regional bodies funded under the regional delivery model. They are also located in one state. Nevertheless, the three partner organisations are quite diverse in respect of their contexts, experiences and approaches to investment planning, and it is expected that the findings will apply to an appreciably wider subset of regional NRM bodies, including in other states and territories. Readers' feedback on the validity of this assumption, or on any other issues discussed in this working paper, will of course be richly appreciated.

The remainder of this working paper is organised as follows. Findings from the scoping research in each of the three partner regions – Border Rivers – Gwydir, Namoi and Northern Rivers (ordered alphabetically) – are presented in sections 2, 3 and 4, respectively. The working paper concludes in section 5 with an overview of findings across the three cases.

# 2. BORDER RIVERS – GWYDIR NRM REGION

Findings from the scoping research undertaken in respect of the Border Rivers – Gwydir NRM Region are presented in this chapter. Section 2.1 discusses the institutional, socio-economic and biophysical context of the Border Rivers – Gwydir Catchment Management Authority (BRGCMA) and its investment planning. Section 2.2 provides details of the Border Rivers – Gwydir Region's ten-year Catchment Action Plan (CAP) which defines the catchment and management targets that the BRGCMA investment planning processes are focused on delivering. Section 2.3 provides an account of how investment planning processes in the region currently occur. Section 2.4 discusses the emphasis placed in the CAP and investment planning on community capacity building and the rationale for this emphasis, and considers how BRGCMA staff perceive this emphasis. Section 2.5 considers the challenges faced by the BRGCMA in undertaking investment planning consistently with the philosophy of integrated catchment management. Section 2.6 discusses a number of experiences the BRGCMA has had with tools or frameworks for structuring the process of making investment decisions, and includes some reflections from its staff relevant to this project's focus on developing an economic method to enhance the accountability of such decision-making. Finally, some closing remarks are presented in section 2.7.

## 2.1 The Border Rivers – Gwydir CMA and its setting

The region for which the BRGCMA is responsible extends for about 50,000 $km^2$ over part of the upper reaches of the Murray-Darling Basin in northern NSW (bounded northwards by the Queensland border). The region comprises two major catchments: the Border Rivers, which includes the MacIntyre River, and the Gwydir River.

A diversity of climate and landform characterises the region. It has a temperate to sub-tropical climate, with considerable gradation from east (cooler and wetter) to west (hotter and drier). It includes three distinct landform types – tablelands, slopes and plains – and four bioregions – New England Tablelands, Brigalow Belt South, Nandewar and Darling Riverine Plains. Patches of extensive forest remain in the high altitude areas of the eastern catchment, with a gradual westward change to more open forest, shrublands and grassy plains.

The population of around 50,000 resides in 11 Local Government areas. Like most rural areas west of the Great Dividing Range, the overall population is declining and an increasing percentage of the population is found in the older age brackets.

There are between 2,500 to 3,000 farmers and managers of agricultural enterprises within the region. The larger figure includes owners of hobby farms that exist on the edge of most rural towns. Technological advances have helped farmers persist in the face of declining terms of trade, although this has contributed to population decline through reduced on-farm employment opportunities and in farm service industries. Moreover, the capacity of the region's community to participate in natural resource management (NRM) efforts is limited by the financial pressures associated with declining terms of trade, by adverse seasonal conditions, and by degradation of agriculture's natural resource base. The region's Catchment Action Plan highlighted the link between the first two of these links as follows:

> Landholders under stress from financial and management pressures are less capable of sound natural resource management as their energies are diverted to dealing with personal and social

> issues. Additionally, there is a proven link between land degradation and rural decline as degraded properties result in reduced viability. This leads to fewer primary producers remaining in the industry. Ironically, it is landholders with degraded properties who are most in need of assistance to implement natural resource practices that can restore farm viability. … The BRG CMA is sensitive to the financial constraints that inhibit many landholders from embracing these practices. The BRG CMA aims to make landholders aware of the many cost-effective, sustainable land management practices available so that landholder viability can be improved in parallel with gains in the condition of natural resources (BRGCMA 2006).

The context in which investment planning occurs in this region has differed from that of most other NRM regions in NSW in a number of ways. One of these differences was highlighted in the CAP as follows:

> Unlike other regions in the state, there is little recent natural resource management information available. This has been due in part to the perception that threats to the condition of natural resources has not been as great in this region as those areas to the south, east and west. Additionally, less pressure has been exerted by organisations in this region to complete projects like native vegetation mapping.

A priority of the BRGCMA has accordingly been to invest in remedying such gaps in the information it requires to maximise NRM outcomes with the funds it has available.

A further way in which the investment planning context of the BRGCMA differs, at least from NRM regions closer to the coast, relates to the difficulty often found in attracting staff with the skills required for particular kinds of investments. This difficulty, and the associated risk of delays in project commencement, can influence whether the BRGCMA decides to undertake a project internally or whether to outsource it to a provider that already has staff with the required skills.

Another way the BRGCMA's investment planning context differed from that of some other CMAs during its first few years of operation stemmed from the fact that the BRGCMA did not originate with an existing section of a regional office of the NSW Department of Infrastructure, Planning and Natural Resources (DIPNR). An officer of the BRGCMA highlighted the significance of this as follows:

> *When the CMAs were formed, our CMA was split off from what was the Barwon region of DIPNR. And Barwon region became the Namoi CMA, centred around Tamworth, and the Border Rivers–Gwydir CMA. So a couple of outpost offices, the Moree and Inverell offices, of a bigger region, suddenly became principle offices of the BRGCMA. Namoi took all the core staff from the business group in the DIPNR regional office and basically rolled over and kept going. Basically an entire arm of the old DIPNR just picked up and became a CMA. The whole management structure, the staff, all picked up. No need to recruit. Here, they had to recruit from almost scratch, because there were very few people in the business.*

Presumably this was one of the factors the BRGCMA's General Manager was alluding to in her following comments from the CMA's Annual Report for 2008-09:

> It would be fair to say the Border Rivers – Gwydir CMA ranked among the late developers [of the 13 CMAs established in NSW]. The organisation has faced many barriers, hindering, even thwarting, any easy, early growth (BRGCMA 2007 p.26).

However, a further reason for the BRGCMA's early slow progress related to competency issues with its first General Manager. The implications of this issue were explained by one officer as follows:

> *The previous General Manager got the axe and all the rest of it. … So there was a fairly high drop-out rate among our staff in late 2004–early 2005 because of the General Manager and all the issues surrounding her expertise. It wasn't until 2006 that we got a new General Manager.*

These early difficulties led the BRGCMA, as discussed below, to adopt a demand-led model of funding NRM investments which better allowed it to expend the funds allocated to it within the time allowed than would have a more strategic model. The following remarks from a BRGCMA officer suggest that the flow-on effects of these early difficulties persisted into 2007-08, but that the CMA has now developed the capacities needed to adopt a predominantly strategic approach:

> *The influence of that historical stuff in 2004–2005 affected us until the end of the financial year just gone. … Like last year we had to move $19.5 million of investment strategy funds. That was a lot of money to spend in one year, which was a legacy from having to catch up from previous years … Now we are in a position where we've caught up. And I think we're on par with other CMAs.*

## 2.2 Catchment Action Plan

The Catchment Action Plan (CAP) for this region was approved by the NSW Government in 2006. It covers the decade through to 2015, and is a statutory, but non-regulatory, plan approved by the relevant NSW Government Minister. The starting point for developing the CAP were two catchment blueprints developed previously by the Border Rivers and Gwydir Catchment Management Boards, respectively, as well as a review of the NRM data available for the region. The CAP states that the mission of the BRGCMA is to 'lead our community by investment in knowledge, partnerships and rewarding innovation to deliver measurable improvements in our natural resources and our long-term quality of life'.

The CAP lists a number of principles the BRGCMA has adopted for implementing the CAP. Of these, the following are particularly relevant to the present project: threats to natural resources that are urgent and need immediate attention are considered a priority; maximise the benefit of a project by ensuring that action taken can provide benefits to more than one target where possible; and, funds are maximised through collaboration with other agencies, industry groups and the community.

The CAP set catchment, or resource condition, targets for four themes. These themes are: community, biodiversity and native vegetation, water, and soils and land use. It also set various management targets (17 in total) for each of the themes. The targets are listed in Table 2.1.

State targets were defined by the Natural Resources Commission at the same time the BR-G CMA CAP was written. Since the CAP was completed, these targets have been incorporated into Priority E4 of the State Plan, Better Outcomes for Native Vegetation, Biodiversity, Land, Rivers and Coastal Waterways. Four management targets in the CAP, three from the Community theme, and one from the Soils and Landuse theme, align with State targets 12 and 13 specified for Priority E4 of the State Plan. Target 12 states: 'Natural resource decisions contribute to improving or maintaining economic sustainability and social wellbeing'. Target 13 states: 'There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management'.

Table 2.1: Resource condition and management targets identified in the Border Rivers – Gwydir Catchment Action Plan

| Theme and its Catchment Target | Management targets |
|---|---|
| *Community*<br><br>By 2015 we will have a well informed and productive community that values natural resources as shown by a continual increase in the number of people engaged or involved in natural resources management with the BRGCMA. | |
| | Community support and engagement: By 2015, facilitate the engagement of the community in collaborative actions that will improve natural resource management and productivity across the catchment.<br><br>Rural landholders: By 2015 through education and awareness programs, 500 landholders adopt contracts with the BRGCMA for on-ground work.<br><br>Aboriginal cultural heritage: By 2015, facilitate the engagement of the community in collaborative actions that will improve natural resource management and productivity across the catchment. |
| *Biodiversity and native vegetation*<br><br>By 2015 maintain the current extent of native vegetation in the catchment and increase the area by 50,000 hectares that has an improvement in condition. | |
| | Manage for conservation: By 2015 increase the area actively managed for conservation by 25,000 hectares ensuring that priority is given to high conservation value vegetation and the recovery of threatened species, populations, communities and their habitats consistent with the TSC Act Priority Action Statement and EPBC Act.<br><br>Additional native vegetation: By 2015 re-establish an additional 5,000 hectares of native vegetation in the catchment through replanting and or natural regeneration (with a priority given to improving the condition of remnant native vegetation within priority sub-catchments).<br><br>Weeds and feral pests: By 2015, land managers have implemented management practices that reduce weeds and feral pests on 25,000 hectares**.** |

| Theme and its Catchment Target | Management targets |
|---|---|
| *Water*<br><br>By 2015 maintain or improve the condition of all sub-catchments based on the scores from the 2001 Riverine Condition Assessment Index. | |
| | Water quality: By 2015, water quality in all sub-catchments is maintained or improved to ensure that the quality of the water is consistent with the ANZECC and ARMCANZ trigger values for aquatic ecosystem protection 80% of the time.<br><br>Erosion: By 2015 improve river systems through the rehabilitation of 100 km of stream to decrease the rate of erosion and sedimentation in priority locations as identified through the Riverine Condition Assessment index.<br><br>Riparian vegetation: By 2015 manage and protect riparian areas to improve vegetation condition and establish vegetation in an additional 500 km of riparian zone in strategic priority locations.<br><br>Aquatic biodiversity: By 2015 maintain or improve native aquatic biodiversity by improving the condition of 100 km of stream in strategic priority locations.<br><br>Wetlands: By 2015 maintain or improve the condition of 5,000 hectares of land comprising or influencing wetlands (with priority given to regionally significant wetlands and Ramsar listed sites).<br><br>Instream salinity: By 2015 reduce the salt load at Mungindi by 2,500 t and at Mehi by 650 t. |
| *Soils and Land Use*<br><br>By 2015 increase by at least 50,000 hectares, the area of the catchment that is managed to produce a net improvement in soil condition. | |
| | Land capability and best practice: By 2015 an additional 15,000 hectares of land will be sustainably managed according to Land and Soil capability system through contracts established with the BRGCMA.<br><br>Soil condition: By 2015 an additional 15,000 hectares of land will be managed to improve soil condition with priority given to ground cover and the most limiting soil health indicators within each priority sub-catchment.<br><br>Property plans and implementation: By 2015 1,500 farmers will have developed property plans and at least 500 of these will have implemented improved farm management measured through contracts established with the BRGCMA. |

| Theme and its Catchment Target | Management targets |
|---|---|
| | Groundwater recharge areas: By 2015 19,500 hectares of land is managed by practices that maximise the use of water in the root zone in strategic priority locations.<br><br>Discharge areas: By 2015 manage a minimum of 500 hectares of saline discharge areas to reduce runoff and erosion. |

The management targets under the CAP's Biodiversity and Native Vegetation theme align with State Plan targets E4.1, 2, 3 and 4. The 'manage for conservation' target aligns with target 2: 'By 2015 there is an increase in the number of sustainable populations of a range of native fauna species' and with target 3: 'By 2015 there is an increase in the recovery of threatened species, populations and ecological communities'. The 'additional native vegetation' target aligns with target 1: 'By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition'. The 'weeds and feral pests' target aligns with target 4: 'By 2015 there is a reduction in the impact of invasive species'.

The management targets for 'water quality', 'erosion', 'riparian vegetation', 'aquatic biodiversity', and 'instream salinity' under the CAP's Water theme align with State target E4.4: 'By 2015 there is an improvement in the condition of riverine ecosystems'. The 'wetlands' target under this theme aligns with E4.8: 'By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained'.

Four of the five management targets under the CAP's Soils and Land Use theme align with State target E4.10: 'By 2015 there is an improvement in soil condition'. They also align with E4.11: 'By 2015 there is an increase in the area of land that is managed within its capability'.

## 2.3 2008-09 Investment Program

The BRGCMA Investment Program for 2008-09 describes the delivery of the CMA's Catchment Action Plan (CAP) in accordance with Priority E4 of the NSW State Plan and the four National Priorities relevant to this region that were identified for the new Australian Government program 'Caring for Our Country'. These four national priorities are 'biodiversity and natural icons', 'coastal environments and critical aquatic habitats', 'sustainable farm practices', and 'community skills, knowledge and engagement'.

The investment planning process was not in accordance with an annual planning cycle set by the CMA. Rather, it commenced around April 2008 after the Australian Government's announcement of the new Caring for Our Country program and the NSW Government's provision of a template that all CMAs were required to use in presenting their proposed investment programs. Like other CMAs, the BRGCMA was given only a few weeks to prepare and submit its investment program – a 'ridiculous timeframe' according to one BRGCMA officer. As it happened, however, BRGCMA did have a 'run-up start' to this investment planning period as a result of all technical staff having participated in a program logic workshop earlier in the year. The BRGCMA's 'management team', comprising four of its senior staff, prefigured the program logic input to the investment planning process by first aligning each of the management targets in the CAP with the relevant State Plan targets. A member of the management team recalled how it:

> *… looked at those national priority areas, then aligned the State targets to those, and then we put our management targets as themes under the State targets. … And then once the management targets were aligned to the State targets, we used the program logic process, and we got all the theme teams involved in the process at that stage.*

### 2.3.1 Allocating investment funds between themes

A set of 'foundational' or 'strategic' activities (e.g., subcatchment planning, training workshops for landholders, etc) for each theme were identified early in the program logic process. The program logic

input to deciding on the proportions of available investment funds allocated to the respective themes involved the staff in each theme team rating within a 'priority matrix', on a scale of one to five, the degree to which they expected each foundational activity would contribute to each of the 13 State Plan Priority E4 targets. The sum of the rating scores for foundational activities in a particular theme was then divided by the sum of rating scores across the foundational activities of all themes. The resulting proportion was taken as indicating the degree to which an investment of $X in that theme would help achieve the State Plan compared with an investment of the same amount in each of the other themes. The proposed share of total investment funds invested in that theme was then set equal to that proportion. This followed the principle that the proportion of total investment allocated to a theme should match the proportionate contribution of the theme, through its foundational activities, to implementing the State Plan. In these calculations, each of the State Plan Priority E4 targets was weighted equally.

The BRGCMA Board's decision on how available investments funds for 2008-09 would be split across themes was finally decided on the basis of the process just described. This followed consideration of splits based on three alternative rationale (Business Paper, Extraordinary Meeting, 9 May 2008). The first of these was based on the number of management targets per theme. The second followed the judgement that half the funds should address soils and water. The third was based on the view that soils (including groundcover) are fundamental to catchment health and sound natural resource management. Without any suitable advice to make a 'well informed' decision, this last rationale reflects the importance of agriculture to the region and the fact that the majority of the BRGCMA's stakeholders are farmers and graziers.

The process endorsed by the Board identified education and training activities as contributing the most to achieving the full array of Priority E4 targets. As a result, the highest proportion of funds was allocated to the Community Theme with which these foundational activities were associated. A CMA officer observed that the Board was surprised by the recommended funding split across themes that resulted from the program logic rationale, but approved the recommendation since the rationale appeared to have been applied rigorously. The officer commented that this process was 'a bit more structured than we have been in the past, despite the constraints we've had'.

### 2.3.2 Allocating investment funds across management targets

A similar program logic rationale was applied in apportioning the funds allocated to a theme between the management targets corresponding to that theme. Hence, the sum of the rating scores for foundational activities associated with a particular management target was divided by the sum of rating scores across the foundational activities of all the management targets associated with the same theme. The resulting proportion was taken as indicating the degree to which an investment of $X in pursuing that management target would help achieve the State Plan compared with an investment of the same amount in each of the other management targets associated with the same theme. The proposed share of investment funds available for the theme to be invested in that management target was then set equal to that proportion.

The six- and twelve-month milestones specified for any given management target were set in accordance with the amount of funding proposed for pursuing that target. Compared with the BRGCMA's previous investment programs, the milestones set for the 2008-09 Investment Program were defined much more broadly. This was to avoid problems with the previous investment program where multiple milestones were defined for each management target. With a specific budget assigned for each milestone, the CMA had to formally request from government a 'variation' if it under-spent

the budget for one milestone and it wanted to transfer the anticipated unspent funds to another activity associated with the same management target. A CMA officer referred to this problem as follows: 'We allocated dollars to specific milestones, and within that milestone you could only do certain kinds of projects. It made it very difficult if no-one wanted to take up the projects. If you've got milestones that are a bit more flexible, then you can change the money around without having to resubmit stacks of paper to the Federal Government'. The officer continued: 'If the milestone was to establish 500 hectares of native vegetation, to achieve that all you can do is establish 500 hectares of native vegetation. But if the milestone is to improve water quality, you can establish native vegetation, you can fence riparian areas, you can encourage the planting of deep-rooted perennials. So there's a whole range of projects can be done under that milestone'. Moreover, the officer observed that the value to the BRGCMA of maintaining this kind of flexibility was reflected by some themes or management targets being funded more than others.

### 2.3.3 Allocating funds for a management target between specific projects

#### 2.3.3.1 Identifying priority subcatchments

In the process of developing the 2008-09 Investment Program, the Board and senior staff of the BRGCMA decided on an investment framework that had significant implications for how funds available for particular management targets would be allocated to specific projects. The elements of this investment framework were:

- 80 per cent of the investment funds will be directed to strategic areas – the CMA will identify areas where the delivery of funds can maximise impact;
- the remaining 20 per cent of investment funds will be used to finance 'demand-driven' projects;
- collaborative actions must be achieved across all programs – establishing partnerships can provide the CMAs with access to funds and expertise;
- all projects must be delivered in the most efficient manner possible;
- projects should only address national priorities and state targets and priorities that are relevant to the BRGCMA region;
- investment should be consistent with Monitoring, Evaluation, Reporting and Improvement principles;
- the BRGCMA will invest in four of the six national priority areas: biodiversity and natural icons; critical aquatic habitats; sustainable farming practices; and community skills, knowledge and engagement; and
- the BRGCMA will consider the principles of intergenerational equity, the precautionary principle, and biodiversity conservation in developing and designing projects.

The CAP envisaged that a strategic approach to investing in projects, whereby most funded projects would be located in prioritised geographic areas, would be pursued from the outset in the BRGCMA's investment planning. It indicated that priority sub-catchments would be identified on the basis of their condition in terms of biodiversity and native vegetation, water, soils and land use resources. It indicated

too that priority sub-catchments would initially be determined by their condition in respect of single issues (e.g., biodiversity and native vegetation) rather than according to their overall condition across all key issues.

As discussed above, however, the BRGCMA faced considerable obstacles at the outset in developing momentum in implementing its investment programs. These obstacles meant that it fell substantially behind most of the other CMAs in expending the funds allocated to it, as well as behind its own schedule for expending those funds. The situation led the BRGCMA to rely predominantly on a 'demand-led' approach to allocating available funds between projects, rather than an approach strategically targeting priority sub-catchments, for reasons given below by a CMA officer:

> *We had to spend a lot of money in a short amount of time to play catch-up. And a target approach, where you decide on certain geographic areas and try to engage people who don't necessarily want to be engaged, can be slow … So we had to be demand-driven just to get our investments out onto the ground, otherwise presumably they'd take the money off us if we didn't spend it. So a demand-driven approach, as a start, was needed to get us to catch up.*

Even so, the demand-led approach was somewhat strategic in so far as it offered landholders higher rates of incentives if their proposed projects were located within priority areas. Nevertheless, landholders from any area could have their projects funded provided they were prepared to accept a lower rate of incentive payment.

The element of the new investment framework requiring 80 per cent of available investment funds to be directed to strategic areas reflected a recognition by the BRGCMA that it had 'caught up' with other CMAs and with its own expenditure schedule and that it was ready, therefore, to commence the predominantly strategic approach to investment envisaged in the CAP.

The Board has now identified a set of priority subcatchments for each of various natural resource issues. With respect to biodiversity, subcatchments with 25-35 per cent native vegetation cover were selected as priorities given that these were closest to what was claimed to be the 30 per cent trigger of ecological sustainability. This trigger was explained as follows: 'It is widely recognised in the literature that once vegetation extent drops below this threshold (30%) the survival of both fauna and flora populations is negatively affected with local extinction rates significantly increasing'(Business paper, Board Extraordinary Meeting, 9 May 2008). The priority subcatchments chosen for managing invasive species were the same as those chosen for the biodiversity issue. These priority subcatchments are thus relevant for targets 1-4 under Priority E4 of the State Plan.

Consistent with the rationale for choosing priority areas for the biodiversity issue, the subcatchments chosen as priorities for addressing the water quality issue were those close to moving below the threshold where their ecological sustainability would be threatened. Hence, the priority was on preserving subcatchments that are still in fair condition (i.e., only limited by one or two of the five indices used for the purposes of Riverine Condition Assessment). However, application of this criterion resulted in identification of 17 priority subcatchments (32 per cent of all the region's subcatchments) for this issue, which would have stretched the available investment funds too thinly. Hence, an additional 'filter' of '% of land used beyond its capability' was applied to reduce the number of priority subcatchments for the water quality issue from 17 to four. These catchments are relevant for target 5 under State Plan Priority E4.

Given the small level of funding available for investing in wetland issues (target 8 under State Plan Priority E4), BRGCMA's management team recommended targeting the investment at RAMSAR wetlands or wetlands identified and listed by the NSW and Commonwealth Governments as of national significance.

The subcatchments set as priorities for the soil condition issue (target 10 under State Plan Priority E4) were those identified as being the most susceptible geologically to degradation, and where over four per cent of land use exceeds land capability.

Priority subcatchments chosen for the 'land managed within capability' issue (target 11 under State Plan Priority E4) were those where landuse capability is exceeded over greater than 10 per cent of subcatchment area. The criterion of 10 per cent was chosen basically because it yielded not too many, nor too few, priority subcatchments.

The subcatchments set as priorities for the issue of maintaining economic sustainability and social wellbeing (target 12 under State Plan Priority E4) were those identified with more than four per cent of their area under landuse assessed as exceeding land capability. These subcatchments will be targeted by the BRGCMA's Farm Management Systems program.

The set of priority subcatchments for the issue 'increase capacity of natural resource managers' (target 13 under State Plan Priority E4) was made up of all the subcatchments prioritised for the other issues. Hence, capacity-building investments are to be targeted at all subcatchments to be receiving investments in respect of addressing natural resource issues.

#### 2.3.3.2 Developing project concepts

As discussed above, the Board's allocation of the investment budget for each theme between the management targets associated with that theme was on the basis of having first identified the foundational activities proposed to be undertaken within that theme. These activities were identified by the technical staff of each theme during the program logic process they participated in. These activities were necessarily rather generic, requiring considerable further specification in the subsequent process of defining actual projects. For the water theme, for instance, the foundational activities were incentives, education, training, strategic partnerships, and monitoring.

After the Board had decided on its proposed investment in a particular theme, and on how that investment would be split between each of the management targets associated with that theme, the team of technical staff under that theme ('theme team') developed the list of 'project concepts' they intended to pursue with those investment funds over the coming financial year. In doing so, they took into account the foundational activities identified for that theme, the progress already achieved by projects already completed and the opportunities to build on that progress, and also the six- and twelve-month milestones set in the coming financial year in respect of each management target. During this stage, they also identified gaps in the information they required to plan investments under their theme, and decided what of their available funds should be allocated to projects targeting those information gaps. All technical staff were involved in this stage. This was not only to gain their ownership of investment planning outcomes but also, in the words of a senior officer, because 'they're the ones that have been actually out in the paddock working on projects'.

Once the theme teams developed the project concepts they proposed to pursue with the investment funds allocated to them, the senior staff of the BRGCMA from theme leaders (catchment coordinators)

upwards looked over all the project concepts to consider how the projects might be best delivered given 'crossovers', human resource issues, and so on. For instance, efficiencies might be available from two projects sharing the same technical officer. Or the likely difficulty of attracting an appropriately-skilled new staff member to the BRGCMA on a short-term contract might mean that a decision is made to deliver the project through another organisation (e.g., Landcare network) already employing someone with the relevant skills. These senior staff also look to remedy any biases coming from theme team proposals that reflect the interests of some team members (e.g., in undertaking certain types of projects they are personally keen on, or in having a project undertaken 'in-house, so that it employs them, rather than outsourced to another organisation) more than the priorities of the BRGCMA.

The Board of the BRGCMA does not involve itself in the process of developing the project concepts. It comments on them once they have been developed and presented to it, and may suggest modifications at that stage. Given the emphasis in the new investment framework on partnerships and efficient project delivery, the Board may pay particular attention to the balance of projects proposed to be run in-house rather than outsourced (i.e., ensuring that a significant share of projects are outsourced). Until fairly recently, the vast bulk of projects funded by the CMA had been run internally.

#### 2.3.3.3 Institutional arrangements for project delivery

The CAP emphasised that 'targets will only be achieved with collaboration. The BRG CMA will form partnerships with industry groups, community bodies, individuals and other agencies that are involved in natural resource management'. Prior to the 2008-09 Investment Program, however, only about 10 per cent of the investment funds available to the CMA were not invested 'in-house' but rather through partners. Given this low reliance on partners, the CAP's emphasis on collaboration was reiterated in the investment framework approved by the Board in respect of developing the 2008-09 Investment Program. One of the elements of this framework is 'funds are maximised through collaboration with other agencies, industry groups and the community'. A CMA officer explained as follows that project delivery through partners can be beneficial because of advantages in managing project risk, in accessing expertise, and in overcoming farmers' mistrust of authority:

> *By us having the projects and running them internally, we're internalising the risk. We're carrying all these contracts. If contracts fall over, or if there's breaches of contracts, it's all back to us. Like for example, our incentives programs. If we had an arrangement with Wetland Care Australia to run half-a-million dollars worth of wetlands incentives, we might have had one contract with them. And they might have had one hundred contracts. So we've been taking on the risk of that hundred contracts rather than one. But the end of the day it comes down really to who's got the skills to best do a project. … And if we don't have credibility ourselves, we go and stand next to somebody who does have credibility. We identify a pillar of credibility, and get them on-side.*

The main reasons for the BRGCMA adopting a predominantly demand-led approach to project delivery in years prior to 2008-09 were identified above. Aside from these reasons, however, this approach was also favoured because it allowed the BRGCMA to build trust with a large number of landholders on a one-to-one basis, and to demonstrate its credentials as a community-based organisation. One of its officers explained that this approach was to:

> *… get farmers involved. Most farmers tend to work by themselves, and they tend to have a bit of a singular approach about how they should manage their farm and stuff. So by adopting a one-to-one extension type of approach, it meant that there was more interaction. It was to try to build*

*trust and confidence in the CMA as well. By building up the trust and confidence from the community, the farmers are more likely to come to the CMA for advice. But also it was trying to increase the knowledge of farmers to make their decisions, rather than to rely on government handouts for changing their management. So it was all tied up with that approach.*

The 2008-09 Investment Program has moved away from the demand-led approach, to a predominantly strategic approach, with 80 per cent of available funds invested in priority subcatchments. Nevertheless, 20 per cent of available funds are still to be invested in demand-driven projects. An officer from the CMA explained that these funds will be reserved to meet:

*… demand for financial support for projects outside our priority areas, like for smaller-scale capacity-building projects. They might go to areas that are not targeted now, but which we might be targeting later and therefore want to start developing interest and relationships.*

It seems that the funds for demand-led investment will be allocated during the year as opportunities arise. For instance, a CMA officer observed that:

*… some other groups, like Meat and Livestock Australia, or Australian Wool Innovation, may not come to us with project ideas until a couple of months down the track. The 20 per cent demand-driven funding provides the CMA with an opportunity to become involved in those types of projects as opposed to letting them go by the wayside.*

It seems that availability of these funds will only be advertised during the year if it becomes apparent that the take-up rate for these funds is not rapid enough for them to be expended by the end of the financial year.

The move to an approach of investing 80 per cent of available investment funds in identified priority catchments, rather than across all subcatchments in the region, was motivated primarily by the desire to channel investments into those locations likely to yield the highest rates of return on investment in terms of preventing or reversing natural resource degradation. The urgency of this move was heightened by the Australian Government's announcement of the Caring for Our Country program, the resultant reduction in the CMA's 2008-09 investment funding compared with the previous few years, and thus a focus on maximising the benefits from investing the reduced funds available.

However, it seems another significant motivation was the desire to reduce the transaction costs incurred in project delivery and administration. The demand-driven approach led to the BRGCMA entering contracts with some 600-700 landholders. Developing each contract involved substantial resources being devoted to activities including site visits, project design and assessment, drawing up a contract, and so on. Moreover, the demand-led approach meant that new projects were spread across the entire region, making it difficult for site visits to 'piggy-back' on one another. There is also the need to monitor the milestones defined in each contract and issue progress payments accordingly. The reality seems to have been that on-site monitoring of performance against contracts generally only occurred at the completion of projects, and only then for projects assessed as 'high risk'.

The demand-driven approach was administered for previous investment programs under the On-ground Works Incentives Program. A CMA officer described how this program worked, and its limitations, as follows:

*I think there were 27 different budget lines, and any of our staff that could go out in the paddock and negotiate against any of these different budget lines according to the rules that are attached to each of them. So any of our staff could negotiate any theme or activity from 27 budget lines with any farmer. And it would usually get them over a suite of activities happening on a property. But the problem with that system was budget accountability. It was one massive pool of millions of dollars that 16-20 of our staff were tapping into.*

Another officer elaborated on these limitations as follows:

*So what we got was a lot of people involved in what I call a supply chain. Lots of people had tasks to do along the supply chain, and it got the job done. But there was no person with 100 per cent accountability for a project from start to end within the organisation. One person might have done a site visit, another might have done project development, someone else assessed it, someone else turned it into a contract, and then someone else administered it, so there was plenty of room for buck-passing if something went wrong.*

Aside from targeting 80 per cent of investments at priority subcatchments, the BRGCMA's new approach to investment planning seeks to be more strategic by assigning responsibility for each project to a particular individual. Another officer explained the new approach would be: 'This is your project area. This is your project. You're responsible for this. And this is your budget'.

Officers from the BRGCMA were asked about how they account for the transaction costs of delivering projects at the investment planning stage. One officer responded: 'We consider transaction costs to be the administrative costs involved in delivering a project. There's no formal system in this organisation of identifying and acquitting these costs. There's just our responsive, reactive type process'. He explained that all technical staff are circulated a spreadsheet on which to estimate how many hours each month they will require to run their existing projects, and that 'what came back showed what I reckon is a gross underestimation of what time it would take'. Asked how the CMA copes when transaction costs of running projects turn out to be significantly higher than expected, he answered:

*There's no formal way. Historically if we've identified shortfalls in an area, we've had to bring in more people to fill the gaps. Towards the end of the financial year, we've had to put on some contractors just to help us with contract management. We've had to put on other administration staff before to help with different things. So unfortunately we haven't got a very good way of saying: 'To run a hundred-thousand dollar project of this nature, it's going to take one percent of the budget. So we need to trim this one percent off the budget to cover that'.*

Nevertheless, this officer cautioned as follows that the transaction cost load differs considerably between different types of projects:

*There's a million dollars for our water-use efficiency program, for which applications for project funding are submitted by post. We receipt them, review them, then develop the contracts and post them out. That's a much lower input than in other areas where you actually send your staff in the paddocks to negotiate with a farmer over a five thousand dollar fencing job. There might be negotiations backwards and forwards, three site visits and a site assessment looking at the conditions of the site, extremely highly-intensive.*

The BRGCMA hopes in moving from dispersed delivery of projects under the demand-led model to delivery predominantly targeted at priority subcatchments that transaction costs will be reduced

significantly as a result of projects being in closer proximity to one another. The potential also exists in the targeted approach to reduce the number of contracts that need to be developed, administered and monitored by negotiating one contract for a group of landholders rather than separately for each landholder. An officer mentioned that the BRGCMA had only recently begun to arrange contracts with Landcare and other groups of landholders rather than only with individual landholders. However, the officer was unsure of whether the BRGCMA would consider negotiating a single contract for a group of landholders in a priority catchment. The concern was that 'if you follow the process of doing a contract with a group, you need to know that the group is relatively stable, they're not going to fall over, and that people won't be disadvantaged by someone not delivering on their piece of the contract, or by having to wait for their neighbours to do something before something else can happen'.

Moreover, the transaction cost advantages of targeting investments in priority subcatchments will be reduced to the extent that landholders in those subcatchments are not already engaged with the BRGCMA or its networks, so that substantial investments in 'door knocking' will be required to motivate landholders to participate in the kinds of projects envisaged for their subcatchment. One BRGCMA officer described this challenge as follows:

> *If you go in and say, 'This subcatchment's stuffed. You need to be doing this, this and this', the only reaction you'll get is people turning their backs and becoming a barrier. … But if you give them the information and let them decide, it will be more effective than just telling them what to do. That's where trust and good relationships are critical.*

Further challenges from targeting investments at priority subcatchments are expected by the CMA's officers in terms of complaints from landholders not located in those subcatchments. One officer observed: 'We have to be mindful of the real negative issues that we're going to have to be deal with. I can see a number of Ministerials arriving onto our desks arising from landholder complaints that they no longer have the access to funding that they've grown accustomed to'.

#### 2.3.3.4 Managing project risk

Two kinds of risks seem to preoccupy BRGCMA officers in considering what projects to invest in or how they should be managed. The first is that a project will fail to deliver the outputs for which it was funded, and that government will accordingly ask difficult questions. One officer made the following observation:

> *We're conservative. The problem is because the CMAs are so accountable with the money and stuff. If you find at the end of the day you've invested upwards of a thousand dollars and you can't tick the box that says 'Making progress towards the targets', then you have to send that report off to Sydney. So finding that you're not delivering on the projects or whatever would not be good. At the end of the day, the CMAs are being invested in to achieve results rather than to innovate or take risks, which is probably a bit unfortunate.*

The other main type of risk is that of the CMA not expending the funds allocated to a project within the relevant financial year. The consequences of this risk became more significant when the NSW Government, towards the end of the 2006-07 financial year, began requiring CMAs to report directly to the Treasury at the end of each financial year on a Net Cost of Service basis. An officer explained that this meant:

> *… if we were given $10 million in that year, we had to spend $10 million, not more, not less. And you lose it if you don't spend it. Before that we were on a three-year rolling investment strategy. We had $30 million or so to invest over three years. If our spending fell behind in one year, we could catch up the next.*

The BRGCMA has responded to the risk of government reclaiming under-spent funds in any financial year by building a 'plan B' into every project. An officer explained this approach as follows:

> *If you've done all these things mapped out in your project plan, and get to the point where you still haven't got any action – like a bundle of contracts finalised – then we can pull the pin on that, pull the money out and put it somewhere else.*

## 2.4 Investing in Community Capacity Building

### 2.4.1 Views from BRGCMA publications

The importance of community engagement and community capacity building for successful natural resource management in the Border Rivers - Gwydir NRM region was emphasised in the Catchment Action Plan (CAP), in the BRGCMA's Annual Reports, and in interviews with its staff. The BRGCMA Annual Report for 2008-09, for instance, states that the CMA 'recognises that community capacity building is central to the implementation of the Border Rivers – Gwydir CAP'. The CAP document states the Board was guided by the following 'overriding value' in developing the Plan, which particularly highlights the role of community engagement in ensuring that environmental outcomes of decisions are balanced against their economic and social outcomes:

> Without the support of, and engagement with, local communities, there will be no long-term improvement in resource management with a balance between the environmental, economic and social outcomes.

The CAP proceeds to explain that the BRGCMA's approach for the long term:

> … is to increase the knowledge, understanding and skills of members of the community so that they are equipped to make sound management decisions regarding natural resources. … It is the ambition of the Board to have the BRG CMA recognised by the community as a useful resource that provides effective advice for the community, rather than constituting an additional arm of government with which the community must contend.

However, the CAP (and likewise the BRGCMA's 2008-09 Annual Report) makes clear the BRGCMA's aspiration for the regional community to become increasingly self-sufficient in making decisions into the longer term: 'It is important that we make the transition from an organisation that dispenses knowledge to one that equips community members to make their own decisions on natural resource management that benefits production and the environment'. Subsequently the CAP observes that 'by emphasising education and communication in its programs, the BRG CMA will equip the region's landholders to direct their own sustainable future'.

It was recognised in the CAP that achievement of the Community Theme's catchment target, seeking 'a continual increase in the number of people engaged or involved in natural resources management with the BRGCMA', would depend not only on activities undertaken under this theme but also on actions taken in pursuing the biophysical catchment targets. Hence, the CAP acknowledges that 'positive

contact between members of the community and the BRG CMA will provide progress towards this [i.e., the Community Theme catchment] target'. And: 'Confidence and trust in the regional model across community, industry and government sectors must be built'. The CAP argues that this trust and confidence will be built through the BRGCMA:

- being transparent and accessible;
- investing in long-term relationships with its partners;
- providing more opportunities for local community involvement in decision making;
- facilitating better interactions between government and communities;
- building a public profile through quality communication;
- using resources effectively and efficiently; and
- adopting quality assessment, monitoring, evaluation and reporting processes.

It is recognised in the CAP that this trust and confidence will not be built overnight: 'It will take a period of sustained effort for the BRG CMA to move from its current image as a regulatory authority to one of true partnership with landholders'.

The CAP emphasised as follows the role of community groups in helping to achieve catchment and management targets: 'Groups can contribute to achieving the targets through physical work or providing a point of contact for information exchange between individuals and organisations. Peer motivation and joint achievement is encouraged through groupings on an area or interest basis'.

### 2.4.2 Views from BRGCMA staff

As discussed above, one of the reasons the BRGCMA adopted a demand-led approach in allocating funds to on-ground projects was to get its staff out in the field talking with landholders as a way of building up the community's trust in it. Nevertheless, developing this trust has proven to be a slow process. Part of the reason for this was that the CMA was seen by landholders and pre-existing community NRM groups (e.g., Landcare groups) as a government creation. A CMA officer discussed as follows the tensions this caused:

> *There were people that weren't going to have anything to do with us because they were probably misinformed about what our role was. There was a lack of trust there from another government body coming in, especially from Landcare. There was a lack of trust through Landcare as well for a while, because they were obtaining their money through the state and federal governments. And they saw the CMA coming in and said: 'We'll try and get rid of them. We don't want the CMA coming in here because it's going to bugger it up for us'.*

Another part of the reason for the BRGCMA's difficulties in building trust from its community relates to some mistakes it made. A CMA officer observed how, 'If you get it wrong, it just sticks around for so long, and the word spreads'. A further part of the reason seems to have been that the CMA did not initially focus enough effort on communicating with its community. A CMA officer observed how 'with a lack of information, people just fill in the gaps. That can perpetuate and ruin our reputation'.

Nevertheless, it seems from the comments of CMA officers that the BRGCMA's early problems of gaining trust from the community, and especially from Landcare groups, have dissipated to a large extent. Even so, the program logic process that its staff participated in earlier this year highlighted the continuing importance of the BRGCMA working with landholders in ways that builds their trust in what it is trying to achieve. As one officer observed: 'A lot of the time we're pushing something based on science, but that doesn't mean much to a lot of farmers. What matters to them is seeing whether their neighbours have had success with it, or whether there's another farmer championing it'.

The program logic process also strengthened the awareness of BRGCMA staff that community capacity building should occur not only on a standalone basis within the Community Theme but also should be integrated into the activities of biophysical themes. The significance of this shift in awareness was highlighted by the comment from one officer that 'traditionally the Community Theme was sort of an add-on, so it was interesting to see how often the community element cropped up in the program logic discussions of each of the biophysical themes'. This recognition of the importance of community capacity building for the biophysical themes was reflected by the BRGCMA recommending to its Board (which approved the recommendation) that the Community Theme be allocated 34 per cent of the base-level investment funds available to it during 2008-09, compared with 20 per cent for the Biodiversity Theme, 23 per cent for the Water Theme, and 23 per cent for the Soils and Land Use Theme[1]. Activities of the Community Theme include employment of community support officers (some by the BRGCMA itself and others through external contracts with Landcare groups or other organisations), convening field days and training programs, supporting community-initiated events, and running the property management planning program.

This shift in awareness among BRGCMA staff seemed particularly acute in respect of the education component of community capacity building. One officer observed how 'when we did the program logic, education stood out as something that everyone considered a priority, in terms of trying to change people's attitudes and get them personally involved with natural resources'. This officer noted how this was recognised in the CAP, in terms of 'we're trying to work towards people not relying on the government for money, but rather making decisions for themselves and paying for any changes themselves'. Another officer observed similarly that 'the philosophy of a lot of people here is that if you change the attitude of the land manager then that's going to give a better long-term change than just shuffling money out'.

The BRGCMA considers that the cornerstone of its efforts to influence landholders' attitudes towards natural resource management is its Property Management Planning (PMP) program. One of its officers explained that 'property management planning is about understanding why you have to change, so that you will. It's not the staff saying 'You have to do this', or 'We'll give you money to do this'. It's so that when you go and do work on your farm other than a project you're paid to do, you don't go back to the same old ways'. Another officer explained that the program had been very successful in this respect because it has:

> *… managed to integrate the profitability side of the farm business with the natural resource side of farm business very effectively. … Farmers probably spend as much of their own money changing things, once they know how it all fits together, as the CMA spends on incentives and*

[1] The proportion for the Community Theme includes the funds allocated for pursuit of the management target for 'property plans and implementation' that was aligned in the CAP with the Soils and Land Use Theme. For operational purposes, however, the BRGCMA's property management planning activities are run as part of the Community Theme.

*through other vehicles. If you're looking for genuine long-term broad-scale land management change, you can't rely on incentives to do it. There's got to be a rational, economic reason for farmers to want to do it for themselves. And most farms are trying to over-produce anyway. So the first, biggest, most important management decision they can make is to farm less country or run less stock. That's a very easy message to sell after a while. If you offer them the option of spending less time and less money achieving the same outcome, they tend to move pretty rapidly in that direction.*

The challenges of engaging communities in priority subcatchments, especially in areas the BRGCMA has not worked in previously, were noted above. The PMP program is seen as the key to addressing these challenges. However, the BRGCMA recognises it will take some years to effectively engage the communities in these subcatchments. Some of the PMP groups already run are located in the priority subcatchments, and the BRGCMA will strive to get some 'early runs on the board' by working with landholders in these groups to extend their thinking beyond their property boundaries to broader landscape management. At the same time, the BRGCMA will initiate what is likely to be a multi-year process of trying to engage other landholders in the priority subcatchments. A BRGCMA officer discussed the challenges of this longer-term process as follows:

*We'll be going to some subcatchments cold, where we haven't had a lot of influence, where Landcare hasn't been involved, but which are really important in the overall scheme of things, and see if we can get a bunch of people interested in doing the property planning and catchment planning. We sort of allow about an 18 month timeframe to get into those subcatchments and gain some credibility.*

Wherever possible, the BRGCMA intends to work in priority subcatchments through existing groups known to landholders (e.g., Landcare groups, irrigator groups, conservation farming groups, etc.) in attempting to engage them. As one of its officers observed: 'If we don't have credibility ourselves, we go and stand next to somebody who does have credibility'. The possibility of establishing steering committees, made up of local landholders, that would guide the BRGCMA's engagement and other activities in those subcatchments was also raised.

## 2.5 Delivering integrated catchment management

The importance of integrated catchment management (ICM) as an approach to managing natural resources was recognised in the CAP for the Border Rivers – Gwydir NRM region as follows:

> The soils, geology, water and vegetation within a catchment are all interrelated as are the actions and activities of the people that live and work in the catchment. Actions in one part of the catchment can affect other parts of the catchment, other catchments and states. Hence, the targets in this document are seen as a series of interconnected themes with actions that achieve one target having a positive impact on another, rather than a series of stand-alone entities.

Accordingly, one of the principles adopted in the CAP for allocating funds to targets and implementing the CAP is to 'maximise the benefit of a project by ensuring that action taken can provide benefits to more than one target where possible'. The 2008-09 Investment program for the region states similarly that 'it is recognised that management targets in the CAP may contribute to more than one catchment target and that catchment and management targets in the CAP may contribute to more than one state-wide target'. Nevertheless, it is admitted that 'for planning purposes and simplicity, a one-to-one relationship is assumed'.

The problem of accounting for interdependencies across catchment and management targets during the process of investment planning was referred to as follows by a BRGCMA officer:

> *In the Catchment Action Plan, we said that it [integrated catchment management] happens, that investment in one thing can promote something else. But we haven't developed a mechanism for measuring it, or integrating it. Our investments to date have been quite separate.*

This problem is reflected also by each theme team having developed the program logic for their theme without identifying the likely crossover effects on other themes, and also by each biophysical theme team identifying, at least in the first instance, the priority subcatchments for their theme independently of the other biophysical theme teams. However, the potential obstacle to an ICM approach of themes selecting their priority subcatchments independently was addressed by the BRGCMA's management team in the planning process for the 2008-09 Investment Program. An officer discussed, for instance, how the Water Theme originally identified eight priority subcatchments based on the criterion of the Riverine Condition Index. To reduce this set to a number commensurate with the investment funds available for their theme, they looked for overlaps between these subcatchments and the priority subcatchments identified for the other biophysical themes. The Water Theme ultimately chose four priority subcatchments for which overlaps were identified.

One of the four priority subcatchments ultimately selected by the Water Theme was the Inverell subcatchment. This subcatchment is also a priority for the Biodiversity and the Soils and Land Use Themes. Although this situation seems conducive to an integrated cross-theme approach, the BRGCMA still faced trade-offs in deciding the degree to which these other two themes should target their available investment funds at this particular subcatchment. For instance, the highest-priority subcatchment for the Soil and Land Use Theme was the Cobbadah subcatchment (with the Inverell subcatchment its second-highest priority). A BRGCMA officer discussed the trade-off here as follows:

> *To get the integration between the Water and Soil Themes would mean we don't go into the highest priority subcatchment for soils. So we'll have to make that final call, knowing that Cobbadah won't have much overlap with anything else. Efficiencies will come into it as well. It will be more efficient for us to run a combined project in Inverell, and have one set of partners, target audiences and major projects, than to split our resources and target Cobbadah as well as Inverell.*

Against the advantages for integration and efficiency from focussing resources on subcatchments prioritised by multiple themes, however, are disadvantages from potentially alienating a larger proportion of the overall regional population. As one BRGCMA officer observed:

> *If we put 80 per cent of our investment into one subcatchment, then we'd have fifty-odd other subcatchments that have negative perceptions with that. … We might actually be better picking four different subcatchments to focus on, so we're spreading our investment and minimising the community's perception that we're not helping the broader community.*

The following remarks from an officer involved in the BRGCMA's property management planning program indicate how the ICM philosophy might come to be practiced within priority subcatchments, or at least in subcatchments prioritised by multiple themes:

*If we've got less than 50 percent of the land area in a subcatchment involved with us, then I think we've got more than a 50 percent chance of it falling over. So we need to get a critical mass of landholders going through the property management planning process so they understand how natural resource management works on their place. And then we need to get them into a broader subcatchment-level planning process so that they can see how to link up the on-ground works they would do on their own property with their neighbours.*

A further way that the BRGCMA applies the ICM philosophy is through the use of its Project Assessment Tool in evaluating how much, if anything, it should invest in a project on a particular property. All else equal, this Tool scores projects more highly the more that they would deliver multiple benefits, and thus leads the BRGCMA to fund a higher share of the costs of multiple-benefit projects. In turn, this increases the incentive for landholders to propose projects generating benefits for more than one management target or theme.

A possible further obstacle to applying the ICM philosophy could derive from the criteria applied by theme teams in identifying what should be their priority catchments. One variant of this obstacle might derive from inconsistency between the logics underlying the criteria. On this count, the logics applied by each of the BRGCMA's biophysical theme teams in setting their criteria for priority subcatchments do appear to be broadly consistent. In respect of the criteria for each of native vegetation, invasive species, water quality, and soils and landuse, the underlying logic is to prioritise most highly those subcatchments where the relevant issue has deteriorated to near a threshold past which further deterioration would trigger an effectively irreversible loss of ecosystem services. However, obstacles might still exist to the extent that the criteria used focus on the symptoms of problems rather than on their causes. When this is the case, the criteria may be less likely to account for interdependencies between different natural resource problems (e.g., soil erosion and declining riverine condition), thus less likely to result in the same subcatchment being prioritised for each of those different problems, and thus less likely to result in those problems being addressed in an integrated manner.

## 2.6 Experiences with, and views on, decision-making tools for investment planning

The value to BRGCMA staff of having formal tools to guide their investment decisions is highlighted by the following remarks from an officer:

*The biggest thing that we've got in the back of our mind is the decisions that we've made, particularly when we haven't made them with a great degree of formal community consultation, need to be defendable. If there's a hole in our defence to the Board about why we made a decision, or why we're recommending some thing, they [the Board] find it.*

The BRGCMA's application of program logic (as discussed in sections 2.3.1 and 2.3.2) to calculating what shares of its available 2008-09 investment funds should go to its different themes and management targets was conducted via a spreadsheet model.

Aside from this high-level decision-making tool in respect of investment choices between themes and management targets, the BRGCMA has relied routinely on a Project Assessment Tool (PAT) it developed as a basis for deciding how much funding to provide particular projects. This tool is also applied via a spreadsheet model. The current version of the PAT estimates the proportion of the total benefits from a proposed project that are public benefits of the kind relevant to the CAP. A BRGCMA officer explained that the public benefit from a proposed project is measured against 11 different criteria that the CMA staff identified as key indicators of the likelihood of CAP-relevant public benefits

arising from a project. The process of deciding on the criteria and their scoring was described as follows:

> *We set up a number of criteria and a set of weightings, and found that it was throwing up a way higher public good benefit than you could legitimately claim for a project. So we started tweaking the numbers until we got to something that seemed reasonably robust and gave us a pretty fair measure of how much public good was coming from the project.*

Scoring a project against the various criteria is undertaken by a technical expert with input from the project's 'case officer'. This arrangement guards against the risk of relationships between case officers and landholders biasing the scoring process.

The scores for a project against each criterion are summed to give a total score, with the maximum possible score being 400. A project scoring 200 would thus be judged as providing half its benefits as public benefits (the other half going to the proponent as private benefits), and the BRGCMA would accordingly offer to fund half of the project's budgeted costs provided this amount is no greater than what has been set as a 'ceiling'.

The CAP states that the PAT integrates 'cost-benefit analysis – prioritising proposals according to the highest environmental value for the least cost'. The BRGCMA accordingly recognises the value of an economic approach to evaluating investment choices, even if in applying the PAT it measures the environmental benefits of projects on ordinal scales rather than on a monetary basis.

## 2.7 Closing remarks

In developing its 2008-09 Investment Program the BRGCMA moved sharply away from a demand-led approach, with investments spread across the region, to one targeted predominantly at a subset of subcatchments prioritised on a scientific basis. For the first time, moreover, it applied a structured process based on program logic when calculating how the total investment funds available to it should be apportioned between the various themes of the CAP (community, biodiversity and native vegetation, water, and soils and land use) and between the management targets set for those themes. This step builds on existing use of the Project Assessment Tool as a structured method for deciding how funds apportioned to themes and management targets should be allocated to particular projects. Any decision-making tools or processes developed in the present research will seek to build on the BRGCMA's experiences with the structured decision processes it has already used.

This review of the BRGCMA's investment planning context highlighted the strong value placed in this region on community capacity building as a prerequisite for implementing the CAP and sustaining NRM efforts into the longer term. It identified the challenges of translating into practice the philosophy of integrated catchment management, while also documenting some practical steps the BRGCMA is taking in this direction. It highlighted too the challenges of accounting systematically for the transaction cost implications of projects when deciding which to invest in. Any tools or processes developed in the present research will be designed to accommodate the values of CMAs and assist them with challenges including these.

# 3. NAMOI NRM REGION

Findings from the scoping research undertaken in respect of the Namoi NRM Region are presented in this chapter. Section 3.1 discusses the institutional, socio-economic and biophysical context of the NCMA and its investment planning. Section 3.2 provides details of the Namoi Region's 10-year Catchment Action Plan which defines the catchment and management targets that the NCMA's investment planning processes are focused on delivering. Section 3.3 presents details of the investment programs developed and run by the NCMA since its inception. Section 3.4 contains an account of how investment planning processes in the region currently occur. Section 3.5 discusses the emphasis placed in the CAP and investment planning on community capacity building and the rationale for this emphasis, and includes relevant comments from NCMA staff. Section 3.6 considers the challenges faced by the NCMA in undertaking investment planning consistently with the philosophy of integrated catchment management. Section 3.7 discusses a number of experiences the NCMA has had with tools or frameworks for structuring the process of making investment decisions, and includes some reflections from its staff relevant to this project's focus on developing an economic method to enhance the accountability of such decision-making. Finally, some concluding remarks are offered in section 3.8.

## 3.1 Namoi Catchment Management Authority and its setting

The NCMA was established in July 2004. It took over the responsibility for leading integrated catchment management in the region from the Namoi Catchment Management Board, which was established in 1999.

The region for which the NCMA is responsible covers about 42,000 $km^2$ and is located within the Murray-Darling Basin in north-western NSW. The main watercourse in the region is the Namoi River. Its tributaries arise from the Liverpool Ranges in the south, the Great Dividing Range in the east and the Nandewar Range to the north. The river and associated wetlands and floodplains have been modified extensively to support irrigated agriculture and a growing population.

Approximately 100,000 people live in the region, and they are concentrated mostly along the Namoi River and its tributaries between Tamworth and Narrabri. The major towns located in the region include Barraba, Manilla, Nundle, Tamworth, Quirindi, Werris Creek, Gunnedah, Narrabri, Wee Waa and Walgett. Eight local government areas are either wholly or partly located in the region.

Grazing in the largest landuse in the tablelands part of the region, whereas dryland cropping is becoming more important in the slopes part of the region. Extensive grazing and farming enterprises feature in the plains part of the region, as do irrigated cotton enterprises. Agricultural production enterprises account for about half of the value of the region's output. In terms of employment, the two major economic sectors in the region are agriculture and the wholesale/retail trade.

The issues to be addressed by natural resources management in the region include water quality decline, soil and land degradation, dryland salinity, and loss of native vegetation and decline in biodiversity.

Most of the original staff of the NCMA transferred from the Barwon Region of the Department of Infrastructure, Planning and Natural Resources. Apart from Human Resources, however, the NCMA has developed internally its business systems.

## 3.2 Catchment Action Plan

The Catchment Action Plan (CAP) for this region was approved by the NSW Government in January 2007. The starting point for its development was the Catchment Blueprint developed previously by the Namoi Catchment Management Board. The CAP covers the decade through to 2016, and is a statutory, but non-regulatory, plan approved by the relevant NSW Government Minister (NCMA 2007).

The purpose of the CAP is to set the strategic framework for all stakeholders involved in NRM for the region over the decade. The CAP states accordingly that its implementation is not just the responsibility of the NCMA but also of other organisations with which the NCMA is committed to developing partnerships. The CAP states that the mission of the NCMA is 'to be a trusted and energetic organisation working with creativity, innovation and self-motivation' and that its core values include 'display[ing] integrity and honesty' and being 'trusted by the community' (ibid.).

The CAP list a range of principles for the NCMA to follow when deciding how to allocate investment funds at its disposal, and these include:

- cost sharing arrangements for government investment are in keeping with public versus private benefits;
- investment is in areas where progress towards achieving targets is most achievable;
- investment is for multiple outcomes; i.e., in areas utilising activities that address more than one issue or target;
- investment is in large landscape projects to achieve catchment-wide targets and landscape-level change;
- investment is preferentially with entitles that have the capacity to undertake priority works;
- partnerships are built with other key players in NRM for investment in, and delivery of, programs; and
- existing successful programs are built on, particularly in areas where community groups or other stakeholders are able to manage their own projects (ibid.).

The CAP sets Catchment and Management Targets for what were identified to be the four key regional 'resources' - native plants and animals; surface and ground water systems; the landscape; and people and their communities. One Catchment Target is set for each of these resources, which states a broad goal in respect of the future condition of the resource. Each Catchment Target is accompanied by a number of Management Targets, which define more specifically the desired outcomes for the relevant resource. The Management Targets for a particular resource address those issues identified as having the most significant impact on that resource, and which also the NCMA has capacity to influence. The Catchment Target for a resource is intended to reflect the condition of the resource expected to result from the cumulative outcomes of the Management Targets. The various Catchment and Management Targets set in the CAP are listed in Table 3.1.

Table 3.1: Resource condition and management targets identified in the Namoi Catchment Action Plan

| Theme and its Catchment Target | Management targets |
|---|---|
| *People and their communities*<br><br>From 2006, there will be continual improvement in the ability of the people in the catchment to implement the Namoi Catchment Action Plan. | |
| | From 2006, continually increase people's recognition of, and attitude to, NRM issues and appropriate management practices. |
| | From 2006, continually increase the level of participation in NRM activities and adoption of practices, which achieve the outcomes of the CAP. |
| | From 2006, improve the economic stability and wellbeing of people in the Namoi Catchment. |
| *The landscape*<br><br>From 2006, there will be an increase in the extent of landscape managed sustainably. | |
| | From 2006, increase the area of land managed according to BMP [best management practice]. |
| | From 2006, increase the area of land used in accordance with land capability. |
| | By 2010, the planning strategies and instruments of state government and four local governments will be consistent with the objectives of the Namoi CAP. |

| Theme and its Catchment Target | Management targets |
|---|---|
| *Surface and ground water systems*<br><br>From 2006, there is an improvement in the condition of surface and ground water ecosystems | |
| | From 2006, there will be an improvement in riverine structural stability, and the condition and extent of native riverine vegetation in priority riverine areas.<br><br>From 2006, maintain or improve surface and grond water quality suitable for irrigation, raw drinking water and aquatic ecosystem protection at Goangra, Gunnedah, Narrabri.<br><br>From 2006, protect and assist the recovery of threatened or priority native aquatic species in identifying priority areas. (This includes groundwater dependent systems).<br><br>From 2006, oversee and review water management plans and processes and the Water management Act 2000, so that Water Management Plans, including Water Sharing Plans, result in fair and reasonable access to surface and ground water sources for the environment (water dependent ecosystems), economic uses (agricultural, industrial, town water supply) and social values (recreation, cultural). |
| *Native plants and animals*<br><br>From 2006, there will be an improvement is the extent and condition of native plants and animals, and the environments in which they live, within each Interim Bio-Regional Assessment (IBRA) sub-region of the Namoi. | |
| | From 2006, maintain or improve the extent, distribution and condition of the existing native vegetation of the catchment.<br><br>From 2006, support the recovery of priority fauna populations, and Threatened Species, Populations and Communities.<br><br>From 2006, reduce the economic and environmental impacts of invasive plants and animals. |

The Management Targets set in the CAP were not quantified, the reason being that 'it is meaningless to assign quantitative milestones for targets or actions unless the level of funding is known' (ibid.).

The CAP indicated how its Management Targets aligned with the 13 state-wide targets for NRM originally set by the NSW Natural Resources Commission, which have since been adopted as targets for Priority E4 ('Better outcomes for native vegetation, biodiversity, land, rivers, and coastal waterways') of the NSW State Plan. The first two management targets for the People and their Communities theme align with Target 13 for Priority E4. This target ('E4 Target 13') states: 'There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management'. The third management target for this theme aligns with E4 Target 12 ('Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being').

The first management target for the Landscape theme aligns with E4 Target 10 ('By 2015 there is an improvement in soil condition'), while the second management target for this theme aligns with E4 Target 11 ('By 2015 there is an increase in the area of land that is managed within its capability'). The third management target for this theme is unaligned with any E4 targets, although it aligns with the NCMA's responsibilities under the (NSW) Environmental Planning and Assessment Act 1979.

The first management target for the Surface and Ground Water Systems theme aligns with E4 Targets 5 ('By 2015 there is an improvement in the condition of riverine ecosystems') and 8 ('By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained'). The second management target for this theme was not aligned with any E4 target, although it was aligned with matters listed as being of national concern in respect of the first Natural Heritage Trust extension (NHT2) and the National Action Plan for Salinity and Water Quality (NAP). (Australian Government funding for the NCMA's base-level funding was via the NHT2 and the NAP). The third management target for this theme aligns with E4 Target 6 ('By 2015 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses'). The fourth management target for this theme was not aligned with any E4 target, but relates to the NCMA's responsibilities in respect of the (NSW) Water Management Act 2000 and Water Management Amendment Act 2005.

The first management target for the Native Plants and Animals theme aligns with E4 Target 1 ('By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition'). The CAP also aligns E4 Target 1 with the second management target for the Landscape theme ('From 2006, increase the area of land used in accordance with land capability'). The second management target for this theme aligns with E4 Targets 2 ('By 2015 there is an increase in the number of sustainable populations of a range of native fauna species') and 3 ('By 2015 there is an increase in the recovery of threatened species, populations and ecological communities'). The third management target for this theme aligns with E4 Target 4 ('By 2015 there is a reduction in the impact of invasive species').

For each of the management targets set in the CAP, a set of corresponding management actions is listed. These actions 'provide the strategies to develop those [management] targets' (ibid.). The management actions corresponding with each management target are identified in Table 3.2.

Table 3.2: Management actions listed in the Namoi CAP for each management target

| **Theme and corresponding Management Targets** | **Management Actions** |
|---|---|
| *People and their Communities* | |
| From 2006, continually increase people's recognition of, and attitude to, NRM issues and appropriate management practices. | i.. communication and awareness programs about natural resources and cultural heritage;<br>ii. engagement with key stakeholders;<br>iii. acquiring and managing knowledge. |
| From 2006, continually increase the level of participation in NRM activities and adoption of practices, which achieve the outcomes of the CAP. | i. education and training programs covering all management targets;<br>ii. building partnerships to assist with investment strategy of CAP;<br>iii. determining the most effective ways of investing in NRM outcomes;<br>iv. providing staff to engage and support people in CAP activities;<br>v. improving the capacity of people to adopt and manage change. |
| From 2006, improve the economic stability and wellbeing of people in the Namoi Catchment. | i. delivering programs that support the productive, profitable and sustainable use of natural resources;<br>ii. understanding the social and economic environment in the Namoi;<br>iii. including socio-economic parameters in program and project design, assessment, implementation and evaluation;<br>iv. mitigating negative impacts of CAP programs and activities. |

| Theme and corresponding Management Targets | Management Actions |
|---|---|
| *The Landscape* | |
| From 2006, increase the area of land managed according to BMP [best management practice]. | i. developing and/or extending BMP in partnership with industry;<br>ii. assisting the adoption of industry based BMP through technical support and incentives. |
| From 2006, increase the area of land used in accordance with land capability. | i. property management planning and subcatchment planning;<br>ii. changing land use in areas where land is not being used for a purpose consistent with the capability of the land;<br>iii. partnerships with new and emerging industries. |
| By 2010, the planning strategies and instruments of state government and four local governments will be consistent with the objectives of the Namoi CAP. | i. partnerships with local government;<br>ii. recognising and protecting key assets in planning instruments;<br>iii. including provisions in LG management plans which facilitate achievement of the CAP targets;<br>iv. implementing urban and industrial BMPs, including water use efficiency and water quality measures;<br>v. producing Catchment-wide State of the Environment Reports and annual reports which jointly report on progress towards achieving the CAP targets by all NRM stakeholders in the catchment. |

| Theme and corresponding Management Targets | Management Actions |
|---|---|
| *Surface and Ground Water Systems* | |
| From 2006, there will be an improvement in riverine structural stability, and the condition and extent of native riverine vegetation in priority riverine areas. | i. implementing BMP in the riverine zone, including improved grazing management and provision of alternative watering points;<br>ii. revegetation using native species, and weed control in strategic areas;<br>iii. structural rehabilitation works. |
| From 2006, maintain or improve surface and grond water quality suitable for irrigation, raw drinking water and aquatic ecosystem protection at Goangra, Gunnedah, Narrabri. | i. rehabilitating riverine ecosystems;<br>ii. minimising pollution from point sources discharges such as industry;<br>iii. minimising diffuse source pollution by better land management;<br>iv. protecting groundwater from contamination by salts and pesticides;<br>v. improving river flow. |
| From 2006, protect and assist the recovery of threatened or priority native aquatic species in identifying priority areas. (This includes groundwater dependent systems). | i. improving knowledge;<br>ii. protecting threatened species and promoting recovery through Threat Abatement and Recovery Plans;<br>iii. implementing aquatic habitat rehabilitation projects;<br>iv. improving fish populations through restocking and control of pest species. |
| From 2006, oversee and review water management plans and processes and the Water management Act 2000, so that Water Management Plans, including Water Sharing Plans, result in fair and reasonable access to surface and ground water sources for the environment (water dependent ecosystems), economic uses (agricultural, industrial, town water supply) and social values (recreation, cultural). | i. water sharing plans;<br>ii. consultative processes;<br>iii. adaptive environmental water management;<br>iv. major infrastructure upgrades;<br>v. dam operations;<br>vi. floodplain management and planning. |

| Theme and corresponding Management Targets | Management Actions |
|---|---|
| *Native plants and animals* | |
| From 2006, maintain or improve the extent, distribution and condition of the existing native vegetation of the catchment. | i. increasing the area of public and private land managed for production and native plant and animal diversity objectives;<br>ii. increasing the rea managed for vegetation and wildlife conservation, with a priority on Regionally Significant Vegetation (RSV) areas;<br>iii. enhancing the extent and condition of RSV areas across the catchment, by strategic re-vegetation and regeneration;<br>iv. using the provisions of the Native Vegetation Act 2003 – Property Vegetation Plans (PVP) to prevent broadscale clearing and restricting the removal of RSV. |
| From 2006, support the recovery of priority fauna populations, and Threatened Species, Populations and Communities. | i. identifying priority species, populations and/or communities found naturally in the Namoi Catchment;<br>ii. selecting 'Priority Species' which match the habitat needs and have similar threatening processes as priority Threatened Species;<br>iii. providing community education and awareness programs about priority species, and what activities threaten their survival;<br>iv. promoting Priority Species recovery through implementing recovery plans, targeted threat abatement measures, and protection of known habitats. |
| From 2006, reduce the economic and environmental impacts of invasive plants and animals. | i. preventing establishment of new invasive plants and animals;<br>ii. limiting spread of key emerging invasive plants and animals;<br>iii. applying strategic control measures to existing invasive plants and animals, which includes current pest and weed strategies. |

## 3.3 Investment programs

### 3.3.1 Previous investment programs

The 2008-09 Investment Program is the third of the investment programs developed by the NCMA and funded by the NSW and Australian Governments. The first of these (referred to as an Investment Strategy) covered the period 2004-07, and the second covered 2006-09. The first two programs were on a three-year-rolling basis, whereas the 2008-09 Program is on a four-year-rolling basis. To date, the budget for the last financial year covered by each program has been superseded by the budget for the first financial year of the new program.

The 2004-07 Investment Strategy was based on the catchment and management targets set by the Namoi Catchment Management Board (CMB) in the Namoi Catchment Blueprint. The CMB developed the three-year rolling 2003-06 Investment Strategy, which was superseded by the NCMA's 2004-7 Investment Strategy. The 2004-07 Strategy was based on the extensive community consultation undertaken by the CMB when developing the Blueprint and the 2003-06 Strategy.

The 2004-07 Investment Strategy was delivered through five programs corresponding to the five catchment targets identified in the Namoi Catchment Blueprint: Biodiversity; Riverine Ecosystems; River Salinity; Salinity; and Soil Health and Sustainable Landscapes. The proposed allocation of external funds to each of these programs was:

- 15.5 per cent for the Biodiversity program;
- 25.7 per cent for the Riverine Ecosystems program;
- 12.4 per cent for the River Salinity program;
- 24.9 per cent for the Salinity program; and
- 21.6 per cent for the Soil Health and Sustainable Landscapes program.

The 2006-09 Strategy was based on the revised set of catchment and management targets identified in the CAP. The new Landscapes theme incorporated the preceding Soil Health and Salinity programs. The new Surface and Ground Water Ecosystems theme incorporated the preceding Riverine Ecosystems and River Salinity programs. The new Native Plants and Animals theme incorporated the preceding Biodiversity program as well as an additional emphasis on threatened species and invasive plants. In addition, the new People and their Communities theme was added to make more transparent the engagement and education components of the previous Investment Strategy. The allocation of funds proposed in this Strategy to each of the new programs was:

- 28.3 per cent for the People and their Communities program;
- 35.0 per cent for the Landscape program;
- 15.9 per cent for the Surface and Ground Water Systems program; and
- 20.8 per cent for the Native Plants and Animals program.

### 3.3.2 2008-09 Investment Program

The 2008-09 Investment Program was developed for the period after the end of the NHT2 and NAP programs, on the basis of Australian Government advice regarding the funding arrangements for its new Caring for Our Country (CfOC) program and NSW Government advice regarding the funding it would provide in the new context (where state governments were not required under the CfOC program to match funding provided to their state by the Australian Government).

The over-riding priorities of this Investment Program include:

- developing strong partnership approaches across the Catchment that will increase the effectiveness and leverage from tax payer funded dollars;
- undertaking a strategic and prioritised sub-catchment planning focus to implement a vertically integrated NRM package; and
- strategically addressing issues impacting on priority environmental assets as identified in the Namoi Nature Conservation Strategy.

The Investment Program details the NCMA's proposed investment expenditure against each of the Priority E4 Targets in the State Plan and each of the CAP management targets aligned with each Priority E4 Target. It identifies the various 'programs' through which each management target will be pursued during 2008-09, the proposed budget for each program, as well as the milestone to be achieved by each program by the end of this period. The Investment Program also details how proposed investments will help deliver the following national priorities set for the CfOC program:

- biodiversity and natural icons;
- the National Reserve System;
- critical aquatic habitat;
- sustainable farming practices including Landcare;
- community skills, knowledge and engagement (with a strong focus on Indigenous engagement in NRM).

Due to the significantly reduced funding available to the NCMA compared with previous years, the 2008-09 Investment Program focuses on only a subset of the 13 Priority E4 Statewide Targets. The E4 Targets for which budgets and milestones are presented are Target 1 (native vegetation extent and condition), Target 5 (condition of riverine ecosystems), Target 11 (land managed within its capability), and Target 13 (capacity of natural resource managers). A total of eight 'programs' are detailed in the Investment Program as the means by which these E4 Targets will be pursued.

The proposed investment in E4 Target 1 is via the Priority Catchment Assets Management program, the end-of-financial-year milestones for which are: (1) 1,000 ha of high priority native vegetation remnants increased in extent over two sites; (2) 1,000 ha connectivity re-established at two high priority corridor sites; (3) 1,000 ha of native vegetation improved at four priority sites; and (4) 30 people trained in appropriate management actions for priority catchment assets. Although this program was aligned

entirely with E4 Target 1, the Investment program document recognises that it will also address E4 Targets 2, 3, 4, 5, 8, 12 and 13.

The proposed investment in E4 Target 5 is via the Water Management Planning program, the end-of-financial-year milestone for which is delivery of two high-level knowledge products developed to inform strategic water planning and policy in the Namoi catchment. The documentation in respect of this Target explains that that 'improving the condition of riverine ecosystems requires targeted projects to improve riparian vegetation, water quality and habitat, complemented by high level water management planning and a landscape level approach to natural resource management'. It explains too that contributions to E4 Target 5 will be made via the Priority Catchment Assets Management program aligned with E4 Target 1, and the Holistic and Vertically Integrated NRM program aligned with E4 Target 11. It explains also that the Water Management Planning program will address E4 Targets 1, 2, 3, 6, 8, 12 and 13.

The proposed investment in E4 Target 11 is via the Holistic and Vertically Integrated NRM program, the end-of-financial-year milestones for which are: (1) two high priority subcatchment plans completed; (2) subcatchment key actions identified and prioritised; (3) 30 per cent of land managers engage in relevant NRM training; (4) 20 per cent of key priority actions within the subcatchment implemented; and (5) outcomes-based subcatchment MERI framework established. Documentation for this target explains that:

> This program will target priority sub-catchments for integrated planning and on-ground works programs … Subcatchment plans will be developed with key actions identified and prioritized for implementation. Implementation will be supported by training and extension, awareness campaigns and public funding for high public value works. A key to this program is the development of property management plans that enable landowners to prepare their own strategies too address priority issues and to manage their resources to implement these plans.

This documentation explains also that the Holistic and Vertically Integrated NRM program will address, aside from Target 11, E4 Targets 1, 2, 3, 4, 5, 6, 8, 10, 12 and 13.

The proposed investment in E4 Target 13 is via five different programs. Three of these are aligned with the first of the CAP's management targets ('… improve people's recognition of and attitude to NRM issues and appropriate management practices') under its People and their Communities theme. The first of these three programs is Evidence and Knowledge Brokering, and its end-of-financial-year milestones are: (1) four previously developed knowledge products developed into plain English and delivered to the community; and (2) two reports/data sets filling strategic evidence gaps. The second of these programs is Measuring Outcomes, and its end-of-financial-year milestone is 'one evaluation completed'. The third of these programs is Awareness and PR, and its end-of-financial-year milestone is '8 awareness campaigns delivered'.

One of the five programs proposed for delivering E4 Target 13 is aligned with the second of the CAP's management targets ('… increase the level of participation in NRM activities and adoption of practices …') under its People and their Communities theme. This program is Strategic Partnerships, and its end-of-financial-year milestones are: (1) one catchment-wide local government NRM initiative is completed; (2) one partnership is established with a private sector entity or peak industry body; (3) one partnership is established with an NGO that improves delivery of NRM outcomes; and (4) Namoi Local Government Group engagement is maintained.

The last of the five programs proposed for delivering E4 Target 13 is aligned with the third of the CAP's management targets ('… improve the economic stability and well being of people in the Namoi catchment') under its People and their Communities theme. (Note that the wording of this target is similar to E4 Target 12: 'Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being'.) This last program is Aboriginal Communities, and its end-of-financial-year milestones are: (1) 20 Aboriginal people trained in governance, project management and development; (2) one strategic partnership is built to facilitate integration with and access to NRM programs; (3) two on-ground cultural heritage sites are protected; (4) one information package regarding cultural heritage is developed and delivered; (5) ten Namoi CMA staff are trained in cultural awareness; (6) one Aboriginal communities knowledge product is developed; (7) 20 people attend community training; (8) ten juniors complete of 'Going Bush' program; (9) Indigenous specified staff from all NSW CMAs attend workshops to improve their contribution to mainstream CMA activity; and (10) Namoi Aboriginal Advisory Committee engagement is maintained.

Although these five programs are aligned in the 2008-09 Investment Program with E4 Target 13, the Program's documentation for this target makes it clear that the outcomes from the five programs 'will support and deliver against all targets …'.

As noted above at various points, the Investment Program documentation for each of the four State Plan Priority E4 Targets which the NCMA proposed to invest in during 2008-09 identified other Priority E4 Targets that would benefit from those respective investments. Table 3.3 compiles that information, showing which of the 13 Priority E4 Targets are claimed to benefit from the proposed investments detailed in the Investment Program. The tick (✓) in the second column and on the row for E4 Target 2, for instance, reveals that the investment aligned with E4 Target 1 is claimed also to help deliver E4 Target 2.

The four-year investment budget proposed in the 2008-09 Investment Program was allocated between the four themes of state-wide Priority E4 targets in the following proportions:

- biodiversity, 25 per cent;
- water, 2 percent;
- land, 32 per cent; and
- community, 41 per cent.

## 3.4 The process of investment planning

### 3.4.1 Overview

NCMA staff were asked how they developed the 2008-09 Investment Program. The process began with identifying the total amount of funds the NCMA would have available for investment in 2008-09. This amount included unspent funds 'rolled over' from previous years. Estimates were also made of the investment funding amounts that would be available to the NCMA in the subsequent three financial years covered by the four-year-rolling program.

The Investment Program was developed by what the NCMA calls its 'STROPS' group of senior managers. It calculated the investment funds available for 2008-09 after covering the costs of running

Table 3.3: Relevance of the NCMA's proposed 2008-09 investments for each of the State Plan Priority E4 Targets

| **Priority E4 Targets** | **Contributions to each of the State Plan Priority E4 Targets from proposed investments aligned with:** | | | |
|---|---|---|---|---|
| | **E4 Target 1 (native veg. extent & condition)** | **E4 Target 5 (riverine ecosystem condition)** | **E4 Target 11 (land managed within capability)** | **E4 Target 13 (capacity of natural resource managers)** |
| 1- native veg. extent/condition | ✓ | ✓ | ✓ | ✓ |
| 2 - sustainable native fauna populations | ✓ | ✓ | ✓ | ✓ |
| 3 - recovery of threatened species etc. | ✓ | ✓ | ✓ | ✓ |
| 4 - impact of invasives | ✓ | | ✓ | ✓ |
| 5 - riverine ecosystem condition | ✓ | ✓ | ✓ | ✓ |
| 6 - groundwater dependent ecosystems | | ✓ | ✓ | ✓ |
| 7 - marine waters/ecosystems | | *Not applicable to Namoi NRM region* | | |
| 8 - wetlands condition/extent | ✓ | ✓ | ✓ | ✓ |
| 9 - estuary/coastal lake condition | | *Not applicable to Namoi NRM region* | | |
| 10 - soil condition | | | ✓ | ✓ |
| 11- land used within capability | | | ✓ | ✓ |
| 12 - econ. sustainability, social wellbeing | ✓ | ✓ | ✓ | ✓ |
| 13 - capacity of NR managers | ✓ | ✓ | ✓ | ✓ |

its staff. The group identified eight programs that it deemed important to at least maintain in the prevailing climate of reduced government funding. A member of this group observed that 'the eight programs essentially come from the types of programs that we'd already been running'. It was decided that most of the available funds should be invested in on-ground works, and accordingly most of the funds were allocated to two of the eight programs focussed on delivery of on-ground works: the Priority Catchment Assets Program, and the Holistic and Vertically Integrated NRM Program. The budgets for these two programs were calculated apparently not from the 'top down' (how much can we afford to spend given the limited funds available?) but rather from the 'bottom up' (how much will it cost to do what we want to do in these programs?).

Referring to the Holistic and Vertically Integrated NRM Program, for instance, the STROPS group member observed: 'We weren't really thinking about the dollars. We were thinking, okay, if we're going to run two subcatchments through this process, it's roughly going to cost so much'. This officer recalled that once budgets had been estimated for the two highest-priority programs the group turned its attention to 'these other programs that we've also sort of been running historically and that we'd like to keep going'. The officer summarised the foregoing process of investment planning as follows:

> *It was very much built from a needs-basis on a program level … A quasi-rational approach, saying 'We need to find the dollars to run these programs effectively' … A technical expert approach, getting some figures down on paper, then balancing things out at the end of the day to equal the $3.8 million we had available to us.*

The short time available to the NCMA for preparing and submitting the 2008-09 Investment Program made it difficult to involve the Board in finalising the program. External timelines, set at short notice by third parties, influence the type of methodology and processes that can be used. NCMA officers commented on the difficulty of consulting widely given such short deadlines.

In developing the 2008-09 Investment Program, however, NCMA staff were aware of their Board's preference for as much as possible of available investment funds to 'go to the community for on-ground change. You know, to try and limit the amount that gets caught up in engagement or other soft-type activity'. They were aware also of the position of the Board and the NCMA's General Manager that funds should be targeted as far as possible into projects large enough to yield economies of scale and achieve landscape-level change.

NCMA staff were also cognisant in developing the 2008-09 Program that the preferences of the Australian and NSW Governments investing in the program had changed with the introduction of the CfOC program. Under NHT2 and the NAP, these governments had set conditions that (i) at least 80 per cent of the investment funds provided be allocated to on-ground works, (ii) at least 5 per cent of funds be allocated to monitoring, evaluation and reporting; and (iii) no more than 15 per cent of funds be allocated to 'community' programs (engagement, education, awareness-raising, facilitation, support, etc.). Moreover, the Namoi NRM Region was a priority region for the NAP, which meant a large proportion of its funding came from this program, which meant in turn that the NCMA was constrained in spending this share of its budget on projects relating to salinity and water quality.

These funding conditions were no longer relevant with the introduction of the CfOC program, although the NCMA now needed to demonstrate how its 2008-09 Investment Program helped deliver the six national priorities set for CfOC. Accordingly, the NCMA's proposed investments in the Priority Catchment Assets Program were aligned in the 2008-09 Program with the following CfOC national priorities: a National Reserve System; Biodiversity and Natural Icons; Aquatic Habitat; and Community Skills, Knowledge and Engagement. Likewise, its proposed investments in the Water Management Planning Program were aligned with the following CfOC national priorities: Aquatic Habitat; Community Skills, Knowledge and Engagement; Sustainable Farm Practices and Landcare; and Biodiversity and Natural Icons. Its proposed investments in the Holistic and Vertically Integrated NRM Program were aligned with the CfOC national priorities: Sustainable farm Practices and Landcare; Biodiversity and Natural Icons; Aquatic Habitats; and Community Skills, Knowledge and Engagement. Finally, its proposed investments 'community' programs (Evidence and Knowledge Brokering, Measuring Outcomes, Awareness and PR, Strategic Partnerships, and Aboriginal Communities) were aligned with the CfOC national priorities: a National Reserve System; Biodiversity

and Natural Icons; Sustainable Farm Practices and Landcare; and Community Skills, Knowledge and Engagement

Aside from indicating its broad preferences for the shape of an investment program, the NCMA Board has limited involvement with staff in planning particular programs and how available investment funds should be split between these programs. NCMA executive staff present an intitial strategy. The Board then reviews the document and provides both rational and intuitive advice. Board directives may address changes to the content of programs and their investment levels, and they may require deletion of programs and/or addition of new ones Socio-economic issues are considered as part of this advice, often in an intuitive context.

The Board also plays an important role in defending decisions made in developing an investment program against questioning by government investors. In developing its 2008-09 Investment Program, for instance, the NCMA decided, given the reduced level of available investment funds compared with previous years, not to spread those funds over programs developed for each Priority E4 Target, but rather to target the funds on relatively few programs developed for only four of the 13 Priority E4 Targets. An NCMA officer argued that running fewer quality programs is more effective than achieving little change by spreading the funds 'too thin'.

### 3.4.2 Identifying priority assets for investment

In each of the three investment programs developed by the NCMA the stated intention was to target the majority of funds available for a program at a subset of subcatchments in the Namoi NRM Region identified as priority assets for investment. The full set of some 40 subcatchments were based on subcatchment boundaries defined in the Stessed Rivers Assessment Report – Namoi Catchment (1999) and the Interim Biogeographical Regionalisation of Australia (IBRA). Spatial data relevant to each of the CAP's catchment targets were analysed for each of these subcatchments. Based on this analysis, the subcatchments were ranked according to their need for investment and the effectiveness of possible works programs. A subsequent step identified subcatchments ranked highly across a number of catchment targets, on the basis that targeting investment in these subcatchments would maximise investment efficiency by achieving multiple outcomes.

Three groups of adjoining subcatchments were accordingly identified in the 2004-07 Investment Strategy as 'priority investment areas' on the basis that the constituent subcatchments were high priorities for investment for more than one natural resource issue. The three priority areas, and their key issues were:

- Southern Liverpool Plans – soils, salinity and biodiversity;
- Southern Kaputar Outfall – riverine ecosystems and biodiversity; and
- Pilliga Outwash – riverine ecosystems, salinity and soils.

In addition, the area stretching westward from Tamworth to the Southern Liverpool Plains, known as the Melville Ranges, was identified as providing suitable opportunities for investment based on soils and salinity priorities. Further, the Cockburn and Upper Peel subcatchments, and Ironbark Creek and its tributaries within the Upper Manilla subcatchment, were identified as suitable for funding specifically targeted to riverine ecosystems.

The CAP for the Namoi NRM Region noted that data enabling prioritisation of biodiversity investment was less robust than for the other programs. It explained that until better data became available, funds for the biodiversity program would be invested across the NRM Region but with weighting given to subcatchments considered a higher priority based on existing data.

Documentation for the 2004-07 Investment Program discussed how various criteria were applied in identifying priority subcatchments for each program. It is useful to revisit these criteria given an NCMA officer's observation that 'a lot of the decision-making done for the original one for 2004-07 has been carried over to the subsequent documents'.

For the Biodiversity Program, higher weightings were given to subcatchments 'identified as having levels of vegetation cover near a threshold level likely to cause a collapse in the level of biodiversity … In addition, funding for protection of native vegetation will be directed to the western plains (Darling Riverine Plains Bioregion) where clearing pressure is high'.

The criteria for the Riverine Ecosystem Program was explained as follows: 'The works program [for this issue] will be mainly focused on maintaining or protecting areas of high value, as current scientific opinion suggests that the most effective way to maintain 'geodiversity' and biodiversity is to work initially in areas of minimal degradation. It is also based on the need to carry out rehabilitation of stream reaches with high recovery potential, because this is where the greatest level of success and continuity of efforts can be achieved, especially given budgetary constraints'. The River Salinity Program targeted areas with a high level of salinity or that were exposed to a high salinity hazard, as well as areas where there would be significant social, economic and environmental impacts from an increase in river salinity levels. The Salinity Program targeted subcatchments identified as having a high salinity hazard or significant areas of saline outbreaks. Finally, the Soil Health and Sustainable Landscapes Program targeted subcatchments identified as having high levels of erosion or where a significant proportion of land was being used beyond its capability.

As noted previously, the CAP replaced the five overarching programs identified in the Namoi Blueprint that the 2004-07 Investment Program had been based on with four new programs. Hence, the Biodiversity Program became the Native Plants and Animals Program. It was explained in the CAP that investments in this new program would be:

> … focused on habitats that are cost effective to recover, ie, areas that are in reasonable, but not ideal, condition, or in areas of regionally significant vegetation that can be enhanced to achieve a healthy ecosystem through an improvement in condition of extent. Investment into rehabilitating highly degraded landscapes, which is costly and unlikely to provide long term biodiversity benefits, will be limited unless it provides substantial benefits to other targets.

It seems that the NCMA's intention to target its investments in the priority areas it had identified from an integrated perspective, or at least in the priority areas identified theme by theme, was influenced by the government shortening expenditure deadlines. In response, the NCMA adjusted incentive processes to include more low and medium priority subcatchment projects to meet expenditure requirements.

Roberts Evaluation (2008) found accordingly that the spread of funds allocated under the 2006-09 Investment Program across the Namoi Region's 40 subcatchments was fairly flat, demonstrating that the subcatchment prioritisation process had not flowed through effectively to funding decisions. They found also that only 28 per cent of funds invested during this Program were directed to high priority

projects. This is due to a large percentage of funds being invested after incentive processes were adjusted to meet expenditure requirements.

The subcatchments to be prioritised during the term of the 2008-09 Investment Program were under review when the program was submitted to the NSW and Australian Governments. Identification of the priority subcatchments was expected to occur by June 2008.

It is worth noting at this point that the NCMA's identification of priority subcatchments has been, and continues to be, based only on biophysical criteria. The socio-economic capacity within subcatchments to engage with the NCMA's programs is not taken into consideration when deciding which subcatchments to prioritise. An NCMA officer reflected as follows that this was something of a weakness in their prioritisation process: 'Yeah, it would be good to know just how receptive, or how capable economically, each subcatchment would be in contributing, or partly contributing, to the programs were thinking of running there'. In delivering the 2008-08 Investment Program, the NCMA's intention is:

> *… to set up subcatchment groups for those subcatchments we'll be targeting. We'll consult with that group on how they want to develop a plan for their subcatchment. The final phase of the planning process should come up with a list of priority actions the community agrees with. And then we'd look at the range of tools, including financial incentives and whatever, to get those actions going. So there could be a whole raft of actions in a subcatchment, so we can get some really significant change in that area.*

### 3.4.3 Deciding which on-ground projects to fund, and by how much

Much of the delivery of on-ground works programs involves projects contracted with individual landholders. For the investment programs prior to the one for 2008-09, the NCMA's decision-making regarding which projects to fund and by how much was based on the calculation of an Environment Benefits Index (EBI) for each project. An overall EBI score is calculated for each project on the basis of scores assigned for the projects against a range of relevant criteria and weights reflecting the importance the NCMA places on each criterion. Criteria, scoring systems and weights vary program by program. An NCMA officer explained use of the EBI as follows:

> *The Environmental Benefit Index was a way to try to evaluate the value of a project in one common language, so that if you had half-a-dozen projects in front of you, with a limited amount of money, you could use a common denominator to try to work out which had a greater benefit for the environment in relation to the targets that we had. … The EBI was scored from zero to one, and anywhere in between. Then we'd multiply the EBI by the public benefit dollars, how much public money we're prepared to put into that sort of thing per hectare or per kilometre. And that gives you a raw score of how much money we're prepared to put into a particular project.*

The process of deciding how much to fund any particular project came to be simplified, as explained below by an NCMA officer:

> *We started off very complex, trying to factor in everything. … After we did half-a-dozen of them across programs we started seeing a very common trend. If it was an agricultural system project, everything was telling us was that the public benefit component was 25 per cent of all the project benefits, and 75 per cent was the private benefit component. And for the green projects like*

*planting trees or managing areas for conservation, we found a common trend that around 75 per cent of the project total benefits were public benefits. … And back in 03-04, when it was hurry-up-and-get-it-out sort of thing, we thought, 'We can waste weeks and weeks and weeks of work getting very particular about it'. And we found that when we took the 25:75 rule to the market it filtered out the people who really weren't that interested in contributing at all. For some projects the requests for funding were much lower than what we were prepared to pay. And for other projects the requests were much higher than we were willing to pay. But over time the 25:75 rule was a good guide for us on what was a suitable level of funding for a certain type of project. …And at the end of the day we had a fall-back position that the maximum we would pay for a project was what we said [in the investment program] was the average price of delivering that type of project. It was a good way to start negotiating. Because we always knew that no matter how much money we got, it was never going to be enough to do everything we wanted to do. So we were always looking for efficiencies.*

The officer elaborated on the process as follows:

*If we're doing some sustainable agricultural stuff, we'd say 'Well, that's 75 per cent private benefit and 25 per cent public benefit. Then we'd look at the contribution rate, which is calculated roughly on the average cost of doing that type of thing. The EBI might come out as 0.9, and we'd say 'OK, the average cost for each hectare of that type of work is $500'. So our offer becomes 0.9 times the $500/ha times the number of hectares in the project. But really, whoever rang up, it was first-in best-dressed. Initially, before the pressure came on to get money out the door, if the applicant was in a low priority subcatchment, we would say 'You're in a low priority area, so our offer to you is going to be roughly around here. Do you still want to go ahead?' That was so we wouldn't waste time making redundant offers. But when the pressure came on, we increased the scores we gave to lower priority subcatchments, so we could get the money out the door.*

A review of the NCMA's investment programs up to the 2006-09 program reported accordingly that 'the contribution rates that Namoi CMA provides for projects are set between 25 to 75% of the EBI, depending on the degree of public versus private benefit. The greater the public benefit, the greater the contribution rate; the greater the EBI, the greater the amount funded in total' (Roberts Evaluation 2008). This review reported that NCMA staff had noted that the EBI was not actually used to prioritise projects, in the sense of comparing them against each other. Rather, the EBI was applied as the basis of a 'first in best dressed' approach, where landholders proposing projects were paid an amount calculated from the EBI until all available funds had been expended.

An NCMA officer observed as follows that this approach was based on an ethic of equity rather than of efficiency: 'We wanted to pay for public benefit as a foremost principle, rather than looking for pure cost-effectiveness'. The officer indicated that the Australian National Audit Office's 2008 report on the NRM regional delivery model, which questioned the lack of evidence of cost-effectiveness in regional delivery, had led the NCMA to look for the 2008-09 Investment Program at 'a more cost-effectiveness type of incentive model, as opposed to an equity-based model'. This proposed shift is consistent with the recommendation from the above-mentioned review that 'there be a move [by the NCMA] to include a competitive process that allows for funds to be more easily directed to the high priority/high return areas'.

As one officer observed as follows, however, that a competitive model will only be appropriate where there are multiple landholders with the potential to undertake the desired kind of project:

> *Where there are specific issues that are targeted, there may only be one landholder that can deal with it. Then it may be more of a negotiated process. … It might be a particular wetland that we need to get to work on. How we prioritise which landholders to deal with, I don't know, yet. It might be on who wants to talk to us, but I don't want it to be first in best dressed. I think we should be a bit more targeted with that.*

Even though the EBI approach to allocating funds to projects was primarily concerned with equity, some of the criteria accounted for in calculating the EBI were included to reflect efficiency considerations. In particular, project scale was included as a criterion, apparently on the initiative of the NCMA's General Manager (GM). An NCMA officer recalled how the GM had emphasised the need to avoid small projects and target larger projects delivering landscape-scale change. The officer noted the GM 'would say that if that meant us only dealing with the more profitable or bigger landholders, then so be it'. Another officer discussed how the NCMA:

> *… decided to try to be efficient in terms of cost structures. So we hardly do a project under ten grand, unless there's a real reason for why we might do it. That might be because it's high priority for some reason, like if it gives us a chance to get a guy involved in a much bigger project. Because the transaction costs are crippling if you have too many projects. We have six hundred, and I think that's almost too many. Transaction costs are an area nobody's really thought through in any detail. What do you do when it comes to M & E [monitoring and evaluation]? If you have lots of small projects, you are just dead in the water.*

According to an NCMA officer, there have been relatively few small projects (less than $5,000) funded by the NCMA compared with most other CMAs in NSW.

### 3.4.4 Partnerships for project delivery

As noted above, one of the key investment principles stated in the Namoi CAP was 'partnerships are built with other key players in NRM for investment in, and delivery of, programs'. Moreover, the CAP states that 'the targets under the People and Communities program will only be achieved if collaborative partnerships are successfully established with Local Government, education and training providers, industry groups, Landcare groups, … to address the socio-economic aspects of NRM, as well as the environmental issues'. A priority of the 2008-09 Investment Program was to develop 'strong partnership approaches across the Catchment that will increase the effectiveness and leverage from tax payers funded dollars'.

An officer of the NCMA explained that it had developed a partnership policy, but that in practice partnerships were developed on an opportunistic basis with parties able to provide significant benefit to a project as well as contribute funds. Partnering an industry body, for example, opens up a network for the NCMA to use in engaging that body's constituents in NRM

The 2008-09 Investment Program signalled a shift by the NCMA from an opportunistic partnership-building approach to a more strategic approach. As noted in section 3.3.2, one of the eight programs proposed in that document for funding was Strategic Partnerships, the milestones for which comprised one region-wide initiative with local governments, one partnership with a private sector entity or peak industry body, one partnership with an NGO to improve delivery of NRM outcomes, as well as maintaining engagement with the Namoi Local Government Group.

## 3.5 Investing in community capacity building

As noted above, the Namoi CAP identifies a core value for the NCMA as being 'trusted by the community'. It identifies one of its key investment principles as 'existing successful programs are built on, particularly in areas where community groups or other stakeholders are able to manage their own projects'. People and their Communities was identified accordingly in the CAP as one of the four resources with which it is principally concerned.

The CAP observed that social and economic conditions in the Namoi NRM region had fallen relative to metropolitan areas. It noted that people in the region, like across rural NSW generally, tend to be older, less educated and poorer than in coastal or urban areas. It observed that volunteerism is relatively high in the region, but that volunteerism in the NRM field had been weakened by 'burn-out', and that change in this field had shifted from being driven by groups to individuals.

It remarked also that people's responses to environmental issues depend on their knowledge, awareness, skills and attitudes. It argued that these all need to be aligned before people would change their behaviour, even when financial support is made available for NRM activity.

The 2008-09 Investment Program explained that the NCMA's focus on stakeholders' awareness, skills and knowledge, and also on building partnerships, would be prioritised according to the requirements of the other programs to be delivered. One of the key principles identified for this Program is 'building community capacity to provide leverage for government funding'.

Documentation for the 2008-09 Investment Program states that the NCMA in 2007 undertook a benchmarking study of the attitudes and awareness of its stakeholders and community. Results of the study indicated that adoption by stakeholders and the community of practices promoted by the NCMA remains impeded significantly by factors including economic hardship, uncertainty about which practices to adopt and their impacts over time, the ageing landholder base, lack of objective data to base decisions on, distrust of government agendas, and resistance to being told what to do.

Discussions with staff of the NCMA indicated that it had gone to considerable lengths to address challenges to engaging its community arising from the last two of these factors, particularly by seeking to address perceptions of it as 'pseudo government'. The Namoi CMA has aimed to develop an independent brand that is removed from government. This independence or neutrality gives the community confidence that the Namoi CMA values their stake in the natural resources of the Catchment.

## 3.6 Delivering integrated catchment management

As noted in section 3.2, the philosophy of integrated catchment was reflected by the principle in the Namoi CAP stating that the NCMA should allocate its investment funds to achieve 'multiple outcomes; i.e., in areas utilising activities that address more than one issue or target'. It was reflected also in the CAP's identification of priority subcatchments that were found to be important in respect of a number of catchment targets, thus 'providing the opportunity to maximise investment efficiency by achieving multiple outcomes'.

Nevertheless, the 2004-07 Investment Strategy highlighted some methodological challenges in identifying a common set of priority subcatchments across multiple natural resource issues. This Strategy document observed that there were strong consistencies between the priorities identified for

soil health, river salinity and salinity, since it argued these are all degradation issues caused by similar processes and requiring similar management responses. However, it observed there were far fewer similarities between those subcatchments where these 'degradation issues' were a problem, and those with a high priority for investment into biodiversity and riverine ecosystems. It commented that 'this reflects the different approach to management, ie the generally accepted scientific view that conservation of biodiversity and riverine environments is most effective in the least degraded areas'. Although natural resource issues are each distinct, this comment highlights the importance for integrated catchment management of prioritising investment locations for each according to a consistent logic.

In any case, we saw in section 3.4.2 that the set of cross-theme priority subcatchments identified in the CAP did not end up being used as a basis for allocating investment funds. Rather, the NCMA's decisions regarding project funding were influenced by the priority assigned to the project's subcatchment in respect of the particular program from which the project would be funded. This compromise would have limited the scope to realise multiple benefits from individual projects by focusing multiple projects in targeted subcatchments and finding ways to exploit their cross-theme complementarities.

The 2006-09 Investment Strategy mentioned that the NCMA had commissioned work to investigate the advantages or otherwise of investment into programs and projects with multiple outcomes (versus single outcomes). However, it noted that 'the information is not yet available and limited data is making it difficult to achieve a result'. The 2008-09 Investment Program again noted that this work had been commissioned, and commented similarly that 'this information is not yet available and limited data is making it difficult to achieve a result at this point'.

The 2008 evaluation of the NCMA's investment programs by Roberts Evaluation Pty Ltd reported that the benefits from projects with multiple outcomes were acknowledged by NCMA staff, but that no system was in place to report multiple project outcomes. It found this gap in the system had limited the NCMA's recognition or projects offering multiple benefits. This evaluation reported that NCMA staff believed that multiple benefits from projects would be achieved to a greater degree if they were accounted for explicitly in the project assessment process, for instance by incorporating them in calculation of the EBI for a project. It reported also that NCMA staff believed that reporting on multiple outcomes from achieving specific milestones and targets 'would add value to the work they are doing as individuals and as an organisation'. Nevertheless, the evaluation found it would be costly to collect all the information needed to estimate the multiple outcomes of investing in a given activity.

Recent discussions with NCMA staff confirmed the difficulties identified above in pursuing an integrated approach to investing in programs and projects. Asked how the NCMA accommodates the ICM philosophy when evaluating investment alternatives, one officer answered:

> *Yeah, look, it's one of the big gaps. When we look at a project, what do we do? We break it down. If a landholder had a biodiversity area over here, we'd just look at the value of the project for that area. We'd calculate an EBI for that project, and an offer based on that. If the same landholder was looking at doing some sustainable farming over there, we'd calculate an EBI and an offer for that. Our offer to him would be just the sum of those two things. … And that's our biggest gap. In subcatchment planning, we say things like: 'In this subcatchment, we have these priorities. We can do some river strips here. Next to the river we can look at sustainable farming, to make sure we're getting good groundcover levels to assist the river, as well as ecosystems services from the river area back to the farming area'. We know they're there, but how do you*

*start accounting for them in a transparent and robust way? The principle of integrating natural resource management is there, but the capturing and measuring of it, and how you do it, is our big gap.*

The officer continued (referring to a map of Namoi Region subcatchments):

*This subcatchment here is a medium priority for biodiversity. And someone might want to do a biodiversity project there that would deliver benefits for managing soil salinity. But that subcatchment is a low priority for our soils work, so they would only get a low score for that element of the project. Yeah, so we don't look at the integration of the two and put a value on that.*

NCMA staff were asked whether their property management planning (PMP) activities have helped develop integrated projects and thereby help maximise benefits from the limited investment funds available. One officer responded that:

*PMP definitely helps us think about the whole property and all the issues around it. It does give us some integration, but again we just map the different issues and talk about them, but not necessarily say, 'If we did this here, this is how much benefit we would get over here as well'. PMP doesn't do that in a quantitative sense.*

## 3.7 Experiences with, and views on, decision-making tools for investment planning

NCMA staff were asked to discuss their experiences with, and views on, use of formal decision-making tools in deciding how to allocate investment funds. One officer observed that most decisions are supported by a primary knowledge product or report. It is then other variables such as the political and social environment are taken into account to inform the decision. Elements of the decision are both rational and intuitive. The Namoi CMA is building some decision support tools to assist in higher-level decision making.

As discussed in section 3.4.3, calculation of an EBI for each project has been integral to the NCMA's decision making regarding how much to fund particular projects, at least until the commencement of the 2008-09 Investment Program. An NCMA officer explained as follows the need to develop different EBIs for different programs:

*Each issue has different contributing factors. And how projects are designed to deal with those need to be weighted accordingly. In some areas scale is very important. In other projects, the gully-control structure, which has a very different scale, is probably the most appropriate tool. And so you need to have different processes for different activities. And also for different parts of the landscape. In one subcatchment a riparian buffer might need to go only 15 metres from the stream bank. But out at Walgett, the true riparian area may be anything up to 700 metres from the channel. So to get equivalent biodiversity values, or riparian values and water quality values, out of those projects in those two subcatchments, you've got to treat them very, very differently. … And over the years, as programs have come in, we've added new variables. I think we started off with nine or ten, and now we've got about 200. Some have been retired, and some have been revamped.*

Comments from NCMA staff indicated an openness to consider a decision-making tool that uses an economic way of thinking to help structure their investment planning process. One officer remarked

that ‘there’s no formal economic decision tool that prompts us to cover all the elements of a decision in an economic or triple-bottom-line way’.

Another commented: ‘We need to improve our analysis in this CMA so that we get a better bang for our buck. I think we’ve done a reasonable job to this point with the instruments we’ve had at our beck and call. But this has been a very soft industry historically We’re given short-term funding to achieve long-term outcomes’. In response to the present project’s proposal to develop an economic decision tool, this officer suggested that an economic tool to compare the costs and benefits of different projects, including projects working at different scales, would be useful in informing investment decisions.

It was recognised that the outputs from any decision tool developed in this project would comprise only part of the evidence that the NCMA would consider in making its final investment decisions. A member of the NCMA Board explained the advantage of using such a decision support tool in this situation as follows: ‘Even if you don’t do what is objectively found to be best, you at least have some handle on the opportunity cost’. An NCMA officer commented similarly: ‘You may still decide to do something else for some reason that’s in your program logic, but at least it [the decision support tool] helps you weigh it up’.

## 3.8 Closing remarks

The NCMA has sought to pursue a strategic approach to investing the government funds allocated to it, but, at least until the commencement of its 2008-09 Investment Program, was frustrated in this pursuit by the time it took originally to establish its business systems, a consequent accumulation of unspent funds, and ultimately strong government pressures to ‘get money out the door’ in order to catch up with the schedule of funding the Australian and NSW Governments had budgeted for. The NCMA has continued to structure its decision making in respect of funding individual projects on the basis of Environmental Benefit Indices (EBIs) tailored for each of its programs, even if it has had to adjust some of the key EBI criteria (e.g., in respect of favouring projects of a larger scale or located in a priority subcatchment) in order to meet expenditure requirements.

Achieving multiple benefits from investments has also continued as a high priority for the NCMA, although delivering on this priority has proved to be problematical. The NCMA remains keen to find ways of overcoming the information gaps standing in the way of greater progress in this direction.

The NCMA has placed significant emphasis on gaining trust from its constituents, and particularly in addressing lingering perceptions that it is tarred with the same brush as government agencies generally. This emphasis has been reinforced by recent survey evidence that ‘distrust of government agendas’ and ‘resistance to being told what to do’ are key obstacles to landholders and other stakeholders undertaking the kinds of behavioural changes the NCMA has been promoting to them.

# 4. NORTHERN RIVERS NRM REGION

Findings from the scoping research undertaken in respect of the Northern Rivers NRM Region are presented in this chapter. Section 4.1 discusses the institutional, socio-economic and biophysical context of the NRCMA and its investment planning. Section 4.2 provides details of the Northern Rivers Region's 10-year Catchment Action Plan which defines the catchment and management targets that the NRCMA's investment planning processes are focused on delivering. Section 4.3 presents an account of how investment planning processes in the region currently occur. Section 4.4 discusses the emphasis placed in the region's CAP and investment planning on community capacity building and the rationale for this emphasis, considers how NRCMA staff perceive this emphasis, and identifies a few equity issues relevant to this emphasis. Section 4.5 considers the challenges faced by the NRCMA in undertaking investment planning consistently with the philosophy of integrated catchment management. Section 4.6 discusses a number of experiences the NRCMA has had with tools or frameworks for structuring the process of making investment decisions, and includes some reflections from its staff relevant to this project's focus on developing an economic method to enhance the accountability of such decision-making. Some concluding remarks are offered in section 4.7.

## 4.1 The Northern Rivers CMA and its setting

The region for which the NRCMA is responsible extends for about 50,000 $km^2$ over much of the north coast of NSW. It includes the area three nautical miles out to sea, as well as the Lord Howe Island Group in the Pacific Islands. The region encompasses great natural diversity, including estuarine and freshwater wetlands, mangroves, eucalypt and rain forests, open grass lands and woodlands, lakes and foreshores. It includes a number of iconic natural areas, including two World Heritage Listed areas, a diverse and valuable agricultural industry, important commercial and recreational fishing activities, a thriving tourism industry, and rich Aboriginal culture. The population of the region exceeds 450,000 people, with 19 Local Government Areas included in the region.

Unlike some other CMA regions in New South Wales, the NRCMA region has ample community capacity to help implement the region's Catchment Action Plan (CAP). In this region, community demand for funds made available by the CMA for on-ground investment invariably exceeds the supply:

> *On the north coast we've got such a vibrant industry … The whole range of players here makes it very competitive. … Our challenge is always having so much capacity and never enough money to satisfy the capacity. Every program we have is over-subscribed, and we've got to be careful the way we put things out.*

The vibrancy of the natural resource management (NRM) 'industry' in the region means that the CMA is only one of many players with capacity to invest financially in implementing the region's catchment Action Plan. The CMA's 'business model' for investing the public funds allocated to it is accordingly oriented towards leveraging partnerships with these other players so that as much overall investment as possible is undertaken in a coordinated manner consistently with the region's Catchment Action Plan.

> *It's a Northern Rivers Community Catchment Action Plan, not the Board's or anyone else's. We brokered it on behalf of the community. And there's a whole range of investors in NRM across our region, and we're probably the smallest one of all those. We've got nineteen local councils, and there's a pretty big investment from each of them … Five of the councils have got environmental levies, so that's probably matching our base-level funding just in that alone …So*

*in terms of overall investment, the investments detailed in the Investment Program document are the tip of the iceberg.*

However, the vibrancy of this industry does vary considerably across the region. Some parts of the region have markedly less capacity (in terms of financial, human and social capital) to undertake NRM activity than others, and are thus more reliant on CMA investment in addressing their natural resource problems. The NRCMA seeks to help such areas overcome their capacity shortfalls through investing in targeted projects.

The lifestyle attractions of the region have led to greater diversity among the population of the region than found in many other regions. Hence, the CMA has needed to utilise a greater diversity of community engagement approaches compared with most other regions.

*We've got alternates, sea-changers, foreign landholders, large landholders, and whatever else. One size doesn't fit all in our delivery. We've got a whole range of different delivery mechanisms to fit the different groups.*

These lifestyle attractions have also made it easier for the CMA to attract and retain staff than has been the case with some of the 'inland' CMAs. The NRCMA also has coastal and marine NRM issues to deal with, which also sets it apart from inland CMAs.

## 4.2 Catchment Action Plan and associated investment strategies/programs

### 4.2.1 Catchment Action Plan

The Catchment Action Plan (CAP) for this region was approved by the NSW Government in January 2007, and covers the decade to 2016. The CAP is a statutory, but non-regulatory, plan approved by the relevant NSW Government Minister. It states that the mission of the CMA is 'to support and engage the Northern Rivers community to actively maintain and sustainably manage the natural resources within our catchment'.

The CAP set resource condition targets for seven key asset areas (themes). These themes are: community; land use planning; biodiversity; water; coastal management; marine; and soil/land resource. It also set various management targets (26 in total) for each of the themes. The targets are listed in Table 4.1.

### 4.2.2 Investment strategies and programs

The CMA has to date developed four investment strategies/programs to focus the use of its available investment funds in strategically pursuing targeted longer-term outcomes:

- 2004-06 Investment Strategy;
- 2006-07 Investment Strategy;
- 2006-09 Investment Strategy; and
- 2008-09 Investment Program.

Table 4.1: Resource condition and management targets identified in the Northern Rivers Catchment Action Plan

| Theme and its Resource Condition Target | Management targets |
|---|---|
| *Community*<br><br>By 2016, the capacity of the community to contribute to regionally relevant NRM is increased. | |
| | Awareness, knowledge and skills: By 2016, there is an increase in community awareness, knowledge and skills in relation to NRM.<br><br>Community engagement: By 2016, there is an adequate level of community engagement and collaborative partnerships in NRM and adequate trust in NRM institutions and processes.<br><br>Community support: By 2016, there is an adequate level of community capacity building support, including resources and infrastructure. |
| *Land Use Planning*<br><br>By 2016, natural resources and Aboriginal cultural landscapes are managed sustainably in relation to rural/urban residential development and management mechanisms are integrated within regional and local land use planning frameworks. | |
| | Aboriginal cultural integration: By 2011, 100% of regional and local planning instruments and decision-making processes identify and adequately manage landscapes which have physical, cultural or spiritual significance to Aboriginal communities (60% by 2009).<br><br>Environmental assets/rural production areas: By 2011, key environmental assets and significant areas of farmland are identified and protection mechanisms for these areas included in all Local Government development planning instruments (60% by 2009)<br><br>Land use conflict and significant natural resources: By 2016, land use conflict within or adjacent to key environmental assets and rural production areas reduced by 90% (40% by 2009)<br><br>Natural resource integration: By 2011, 100% of LEPs will include provisions to ensure environmental assets and their values are adequately protected in the development of areas designated for urban settlement (50% by 2009). |

| | |
|---|---|
| *Biodiversity*<br><br>By 2016, improve the condition of native terrestrial and aquatic ecosystems. | |
| | Secure conservation management: By 2016, 40,000 ha (12,000 ha by 2009) of native terrestrial and aquatic ecosystem under secure conservation management.<br><br>Habitat connectivity: By 2016, 2,200 ha of corridor habitat restored to provide connectivity (630 ha by 2009).<br><br>Biodiversity threat mitigation: By 2016, 120 high priority actions implemented from adapted threat mitigation plans to address invasive species and interruption to natural ecosystems (with 48 actions by 2009).<br><br>Threatened species: By 2016, implement priority actions of recovery programs for threatened species, populations and endangered ecological communities.<br><br>Biodiversity management and enhancement: By 2016, secure 500,000 (100,000 by 2009) of native terrestrial and aquatic ecosystem under sustainable resource management.<br><br>Habitat rehabilitation and revegetation: By 2016, rehabilitate and/or revegetate 10,000 ha and aquatic ecosystem (3,000 ha by 2009). |
| *Water*<br><br>By 2016, river and aquifer condition is improved. | |
| | River structure, riparian vegetation and fish passage: By 2016, rehabilitate and protect the stream health (in terms of structure, riparian vegetation and fish passage) of 60% of stream length in all identified streams in priority sub-catchments (15% to be completed by 2009)<br><br>Urban water cycle management: By 2016, 100% of local water utilities to have undertaken planning for managing their water systems using an integrated approach, with 33% of priorities from this planning implemented (50% of planning and 10% of implementation to be completed by 2009).<br><br>Water information and education: By 2016, 100% of Local Government authorities actively participating in water monitoring/environmental education networks (key networks established by 2009).<br><br>Aquifer health and river flow: By 2016, extractions from 95% of aquifers are within identified5 sustainable yields and extractions from unregulated surface water in 95% of sub-catchments will provide for environmental water (80% of aquifers and 80% of sub-catchments meeting requirements by 2009). |

| | |
|---|---|
| *Coastal*<br><br>By 2016, there is an improvement in the condition of Coastal Zone natural resources. | |
| | Coastline: By 2016, complete broad-scale management plans for the entire coastline (50% by 2009); and implement identified priority actions that contribute to improved natural resource condition.<br><br>Estuaries and coastal lakes: By 2016, complete management plans for all estuaries (65% by 2009), sustainability assessment and management plans for all coastal lakes (65% by 2009) and implement priority actions that contribute to improved natural resource condition. |
| *Marine*<br><br>By 2016, maintain and improve the health of the marine environment. | |
| | Marine research and planning: By 2016, achieve an effective knowledge base for the marine environment that supports sound conservation and management decision making.<br><br>Best practice: By 2016, Best Practice guidelines and/or Environmental management systems developed and implemented by all key marine resource-based industries.<br><br>Marine Protected Areas: By 2016, develop and adaptively manage the system of marine protected areas in the NRCMA region under the principles of comprehensiveness, adequacy and representation (CAR).<br><br>Marine environment management practices: By 2016, achieve improved management practices that reduce the threats to, and impacts on, the marine environment. |
| *Soil/land resource*<br><br>By 2016, there is an improvement in soil condition to sustainably support agricultural production and natural ecosystem function. | |
| | Soil health: By 2016, 500,000 of agricultural land is actively managed to improve soil health (166,666 ha by 2009).<br><br>Acid sulfate soils: By 2016, 12,000 ha of high risk ASS land is under ASS active management (4,000 ha by 2009).<br><br>Soil conservation/remediation: By 2016, 7,000 ha of degraded land rehabilitated (2,333 ha by 2009). |

The first two investment strategies were developed prior to completion of the CAP, and were aligned with the Catchment Blueprints developed by the three Catchment Management Boards that existed in the region prior to their replacement by the NRCMA. The 2006-09 strategy was aligned with the draft CAP, and the 2008-09 program was aligned with the CAP approved by the NSW Government.

The 2008-09 Investment Program identifies how the CAP's catchment and management targets will deliver on Priority E4 of the NSW State Plan. It does so by detailing proposed investments against the 13 state-wide targets set under this Priority. It also details proposed investments against the six national priorities set under the Australian Government's Caring for our Country program which was initiated in early 2008.

## 4.3 Current process of making investment decisions

### 4.3.1 Allocating available investment funds between themes

The CMA has established an 'Annual investment planning and delivery timetable' which it seeks to work to as closely as possible when developing investment plans for 'base-level funding' over the upcoming financial year.

The initial step of the cycle occurs around September each year. It involves CMA staff estimating the total amount of base-level funding likely to be available in the upcoming financial year, informing the CMA Board of this amount, and recommending to the Board how that amount should be allocated between the seven different NRM themes identified in the CAP (Community, Land Use Planning, Biodiversity, Water, Coastal Management, Marine, and Soil and Land Resources). In earlier years, when the Australian and NSW Governments had approved multi-year investment strategies, the estimate of funding for the upcoming financial year was taken to be the relevant amount specified in the investment strategy (recognising that actual funding may differ from that specified in the strategy).

Once a 'global split' of the estimated budget between themes (known also as programs) is approved by the Board, each of the 'theme teams' (comprising the senior staff working on each theme) is asked to decide on how its approved allocation should be further allocated between sub-programs and projects. The intention is for 'project concept' statements for all proposed projects to be prepared by February for approval by the Board. Subsequent to this approval, the various steps needed to make the projects operational at the commencement of the financial year are undertaken (including development and Board approval of project briefs, advertising of briefs, selection of contractors (where relevant), and negotiation of contracts.

The recommendations of CMA staff to their Board regarding the global split of available funds between themes take into account any conditions imposed by the investing governments. Under NHT2 and the NAP, for instance, the Australian Government specified that a maximum of five per cent of base-level funding was to be allocated to monitoring, evaluation and reporting activities, a maximum of 15 per cent was to be allocated to community capacity-building activities, and that (for regional NRM bodies along the coast) at least 13 per cent was to be allocated to activities under the Coastal Management and Marine Themes. After complying with these rules set by investors, the NRCMA split the remaining funds fairly evenly between the biophysical themes other than Coastal and Marine (albeit with the the Soil/Land Resource Theme receiving a smaller proportion than the Biodiversity and Water Themes).

This approach of spreading available base-level funds fairly evenly across the biophysical themes follows from its business model which, as observed above, seeks to use the funding to strengthen regional-wide capacity to compete for further NRM funding made available on a competitive basis.

> *Our base-level funding is really to keep all the pots on the stove simmering, if you like, to maintain the capacity within our community to lobby and secure other investment. And we do that quite well … We're probably the biggest in NSW in securing some of this competitive money such as the Envirofund, National Landcare programs, and other competitive stuff*[2]*. Our business model is to have most of our investment outsourced to have capacity in our community develop to a level sufficient to secure other investments. That has a major influence on how we decide how the regional budget for base-level funding is allocated. So the majority of our funding is out with the community to build those sort of partners and maximise the leverage that they bring to the table as part of that process*[3]*.*

Aside from the influence of this business model, the CMA's decisions on base-level funding of particular biophysical themes tend to depend on 'how much we've split for the last however many years within our regional budget. So there's a bit of historical stuff that feeds into that. There's also Board tweaking, or negotiation'.

### 4.3.2 Allocating funds between management targets

Once the global split of available base-level funding between themes is decided, each theme team proposes how its funding allocation will be split between the sub-programs run under that theme. Normally a sub-program is established for each of the management targets associated with a theme. Decisions on how funds available for a theme will be assigned between management targets are influenced by considerations including: (i) existing capacity outside the NRCMA to pursue each target; and (ii) the past performance of each sub-program in achieving progress against its management target with the funds invested in it. With respect to (i), for instance, a theme team may allocate only minimal funds to pursuing a management target that some other organisation (e.g., local government council) already has capacity to pursue, and allocate most of its funds to management targets which would not be effectively pursued in the absence of capacity-building facilitated through NRCMA investment[4].

---

[2] In 2007-08, for instance, the NRCMA's base-level funding of about $6 million was more than matched by investment funds obtained through competitive processes that went 'through its books' (total funding for investment through its books was about $12.6 million). The vast majority of funds obtained competitively were allocated to projects managed externally to the NRCMA (i.e., by the NRCMA's partner organisations). Of the $12.6 million going through the NRCMA's books, 20.9 per cent was allocated to projects managed by the NRCMA and 79.1 per cent was allocated to projects managed externally. The total number of contracts operated by the NRCMA during 2007-08, relating to both internally-managed and externally-managed projects, was 420.

[3] Over 70 per cent of the NRCMA's base-level funding for 2008-09 is allocated to outsourced projects. The projects outsourced include community projects (e.g., extension and community support), on-ground implementation projects, and incentive programs.

[4] NRCMA staff observed that this approach can make it difficult for them to report progress against those management targets the pursuit of which is largely left to other organisations with the requisite capacities. That is because these other organisations have no statutory responsibility to report back to the NRCMA on the progress they have made against management targets. To the extent that goodwill from other organisations cannot be relied upon for complete reporting back of progress to the NRCMA, it is unable to report comprehensively on progress in implementing the CAP.

### 4.3.3 Allocating funds for a management target between specific projects

Once a theme team has agreed on its proposal for how base-level funds available to the theme should be split between sub-programs (i.e., between pursuit of different management targets), it then turns its attention to developing a set of project concepts to be run with the proposed funding for each sub-program. Take, for instance, the following management target from the Water Theme: 'By 2016, rehabilitate and protect the stream health (in terms of structure, riparian vegetation and fish passage) of 60% of stream length in all identified streams in priority sub-catchments (15% to be completed by 2009)'.

The rationale for choosing projects to deliver on this management target is:

> … that the protection and rehabilitation of riparian vegetation and river structure is best achieved on a river system basis, whereby the majority of funds are strategically targeted towards projects which cover considerable lengths of stream in moderate to good condition and incorporate multiple landowners. This 'target area' approach requires an established level of planning and community capacity before and during implementation. Community capacity, socio-economic importance and the biophysical condition of streams were assessed across the Northern Rivers to identify the first group of areas to be targeted for investment (NRCMA 2006a pp.78-79).

A CMA officer described the process of identifying target areas as follows:

> *We looked at where there was a [river health] plan, where there was a community of interest, and those biophysical things about catchment cover and stuff, to get that basic list of streams to start with.*

Meanwhile, a need was recognised to increase community capacity in non-targeted areas to participate in river protection and rehabilitation projects. Hence, a three-tiered funding model was adopted to provide a 'stepping stone' opportunity for communities. This model involves three sub-programs: targeted rivers; river reach based; and river small scale:

> Small scale project funding is to assist single landowners undertake small projects and to provide 'seed money' to locally raise the profile of best riparian practices. Reach scale projects cover at least one kilometre of moderate to good condition streams and often require coordination between neighbouring landowners (NRCMA 2006a p.80).

An officer highlighted the value of the small-scale and reach-based approaches as follows:

> *We realised that if we were dogmatic about the whole thing, we might end up doing nothing because if the Landcare group that was there at the time we did the plan with, if they fold and they go to live somewhere else, and the people that move in aren't interested, well then our priority area wouldn't be of any use to us from an investment perspective.*

Small-scale projects were described in interviews 'as an engagement mechanism' and the link between such projects and reach-based projects (and ultimately the target-area projects) was explained as follows:

> *You've got to pick up somebody to champion what you're doing in an area. It often starts with a single landholder. And they might have an issue, so you might want to foster their interest in river*

*management. So we maybe invest with them on a one-off basis, and then we might say 'Your issue is symptomatic of something that's happening in this whole area. If you talk to your neighbours and develop a river health plan with them covering a minimum length of stream, then you will fit into our river reach sub-program'. So that allows us to develop their skills, and also see whether investing in that area under the target-area scheme would be worthwhile.*

The CMA's capacity to invest strategically in river protection and rehabilitation depends on the amount of river health planning that has been undertaken with landholders. Hence:

*We try to maintain river health planning within our river reach sub-program no matter what we're doing. … If we got no budget at all, I would just go, 'OK, we'll just prepare river health plans', and try to find external funding to implement them. Because if you don't have a plan you can't get any external money. Our justification to any investor is that we've got an appropriate plan, and we've got someone committed to implement it. So [when the budget for the Management Target gets reduced], you basically drop off your starter-gun approach [i.e., small-scale projects] and go back to what you've already built in past years – you implement the river health plans you have on the shelf.*

The logic of apportioning funds allocated to the management target between the sub-programs was presented in the CAP as follows:

> … [T]he ecological gains, the scale of geographical area covered and the potential for effective and efficient partnerships also increase as community capacity increases. As such, the proportion of investment in each type of program (small, reach and targeted) should reflect this increase in gains i.e. targeted areas should receive most investment, the reach based program a proportion of this and small scale grants the smallest amount (ibid. p.79).

Hence, when base-level funds for implementing this management target get reduced in any financial year 'the small-scale projects get wiped-out because they're the least strategic … [Y]ou become more strategic as your budget decreases'.

The original intention in the Water Theme was:

*… in every third year we would openly advertise for a group involved in a reach-based project to put up their area to have it turned into a target area. So we would then offer them guaranteed funding for the following three years. That's the concept, but we're finding with every year that's passing that we're just getting cut-cut-cut-cut, and not able to open up the opportunity for a river-reach project area to expand into being a targeted area.*

Pursuit of the management target has therefore relied more on river-reach projects than targeted-area projects: 'The river-reach program is quite functional, because it's sort of small in nature but you can get a decent-sized project running'.

As a further example, consider the 'soil health' and 'soil conservation/remediation' management targets for the CMA's Soil/Land Resource Theme (as elaborated in Table 4.1). The process of deciding on how funds assigned for pursuit of those management targets should be allocated between projects was explained as follows:

*We bring to the meeting table a number of concept ideas for projects each year. We base those concepts on the outcomes of our past projects and on any feedback from our contractors, since most of our projects are contracted out. Feedback is a very important component of us developing the future projects. Not to take away the fact that we have priorities in our CAP, but we need to understand the social side, the needs of the community, to better direct funding to projects on-ground. … The soil team tries to develop as many project concepts as we can. We use a decision matrix to rank our projects. Regardless of what budget comes in, we will take projects from the top of the list. The projects that aren't fundable in that year, we call shelf projects, and they become a source of project concepts for the following year. For the decision matrix, we brainstorm a set of selection criteria, the weighting for those, and the scoring for those.*

The process of choosing the projects to fund with the budget available for these management targets also involves deciding how outsourced projects will be procured:

*We have to decide whether our method of procuring is what we call direct, limited or open. For a 'direct' contract, we make a recommendation to the CMA Board that they go direct to the contractor. That's usually based on the fact that they have carried out our last contract, and it's important that we keep that going because the contractor was delivering, he built the capacity, and it is really pivotal that he stays with it. We also have some 'limited' contacts where we ask a selection of recognised groups, with ability to do the project, to bid for the project. … And, then, 'open' is advertised widely and open for everyone to apply.*

Hence the Board and senior management of the NRCMA provide an overriding check on procurement of outsourced projects, and this check is based on standard procurement rules. This process ensures that the market has been tested adequately, including by identifying whether other parties exist who could supply the required services. Many procurement recommendations from theme teams have been over-ridden as a result of this process[5].

One model used by the Soil/Land Resource Theme is to outsource to a 'reference group' the responsibility for recommending how funds available for these management targets should be invested within a given locality. This model was described as follows:

*The Dorrigo Plateau is a priority identified in our CAP in terms of our theme's management targets. We asked a group of recognised stakeholders in sustainable production to participate in the formation of a reference group. They took the idea back to their group or industry and each came back nominating a participant. The reference group was to give us feedback from the community, and also promote the projects to the community. The second aspect of this model involved engaging a locally-based contractor to run the project of deciding how funds should be invested locally. And we were lucky enough to get a chap who's known in the community and well respected. … We developed a terms of reference for the reference group: their role, our role. We engaged the contractor separately, and we defined his roles as well. The role of the reference committee was basically to decide where they would go with that year's funding and make recommendations regarding which on-ground projects should be funded. And to help the*

[5] However, delays in government approval of investment programs can disrupt the NRCMA's standard process of vetting procurement recommendations from each theme team. When this is the case, the NRCMA adopts an 'interim year approach' which enables procedures relating to contracts, end of year reporting, and budget requirements to be met within the timeframe specified by government investors.

*contractor assess the on-ground funding applications. Their decisions had to go by us though, to make sure they were heading in a direction that contributes to our management targets.*

The rationale for the Soil/Land Resource Theme adopting the reference committee model was explained as follows:

*The CAP does identify some priority areas. But with other projects that we're trying to get up and running, the CAP doesn't provide us that refinement. So by developing sub-program plans we are trying to develop a rationale as to why we are going where we are going. Reference groups help us target our priorities and our roll out. The water theme, they've already identified their target streams and all that. It's all mapped, ready to go. But with the soils theme, we still really don't know who's out there, who's doing what.*

The foregoing discussion focussed on how funds assigned to only a few of the CMA's management targets are allocated between different possible projects, as it was not feasible to examine the process for each of the 26 management targets. Nevertheless, this discussion highlighted the kinds of issues encountered in deciding how to utilise funds assigned to other management targets, and the kinds of principles that the CMA applies when deciding how funds assigned to pursuing a particular management will be allocated between alternative projects.

#### 4.3.4 Choosing institutional arrangements for project delivery

The CMA's business model, which is oriented towards outsourcing projects as a means of leveraging partnerships and further competitive funding, was discussed briefly above. For 2008-09, accordingly, about 70 per cent of the CMA's base-level funding is allocated to outsourced projects. This orientation is explained by the ready availability in this region of organisations with the capacity to make good partners.

The business model also seeks to establish delivery mechanisms for projects on a 'horses for courses' basis. For instance, the Bush Recovery program was a market-based mechanism for pursuing management targets under the Biodiversity Theme. This program 'targets a certain section of the community that is a bit more switched on to the competitive side of tendering. It relies on people knocking on our door rather than us knocking on people's door in some targeted locality'. The reach-based program within the Water Theme also involves people applying competitively for funding to undertake work on their properties. In this case, however, individual landholders need to coordinate with neighbours along a river reach in submitting an application 'since you need to have a number of landholders engaged who are willing to undertake works'. Hence, there can be a greater need for CSOs in this program to 'knock on neighbours doors' to facilitate this coordination.

Some communities may lack the interest or other capacities to engage with programs even when approached, and may thus require a higher level of support from the CMA.

*Some of our traditional areas are never going to engage in the Bush Recovery thing. We need to think about the best mechanisms to engage with them. ... If they're barely making a living, they're not going to engage in controlling weeds along their riverbank. They'll think it's a waste of time. You've got to put a team in there to do it. That's the only way it's going to happen.*

### 4.3.5 Accounting for funding risk in investment planning

A feature of public funding of CMA investment programs is the uncertainty that often surrounds ongoing funding of multi-year projects. CMA staff were asked how they deal with this uncertainty, and whether it serves to discourage investment in such projects. The responses indicate that this uncertainty does not discourage investments of this kind, and that various strategies are used to manage the consequent risks.

One strategy was described as follows:

> *We can break the project into stages, and start with a stage-one project. … Continuation of funding determines how quickly the overall project will achieve its own objectives. If funding is missed for a year, we need to try to keep the community's capacity ticking along and their interest up using money out of our base-level funding or some other funding that we secure.*

Another strategy, for outsourced projects, is:

> *If a project is identified as three or four years, we would normally advertise that as an open contract in the first year, and identify that the contract is for year 1 of a three-year project. And we'd indicate to the contractor that they're likely to be asked to continue with the project provided we get sufficient funding in subsequent years, and provided their performance has been sound.*

Another feature of public funding of CMAs to undertake investments is that the funding is normally provided on a 'use it or lose it' basis, where funds not spent in a given financial year must be returned. CMA staff were asked also how they deal with this aspect of funding risk, and whether it influences their recommendations of which projects should be funded. The following response indicates that this kind of risk is of minor concern in this region and has little or no influence on investment decisions:

> *We're over-subscribed everywhere we go. We've got way more things to do, and more areas to work in, than we could possibly fund. So we can shift money around easily within themes … I mean, meeting budget and end-of-financial-year Treasury requirements is certainly a big priority. But we've got more outcomes to fund than we could ever possibly get money for.*

## 4.4 Investing in community capacity building

### 4.4.1 Emphasis in the CAP and investment programs

The CAP clearly emphasises community capacity building as central to its implementation. This emphasis is reflected in the NRCMA's mission, which 'is to support and engage the Northern Rivers community to actively maintain and sustainably manage the natural resources within our catchments' (NRCMA 2006b p.6).

'Community' is identified in the CAP as a distinct theme. The intent of the three management targets set for this theme is:

> … to continue to build on the skills and knowledge developed in the past, to ensure these are embedded into everyday actions, by bringing people together into peer groups to share innovation and new actions; and to increase trust across all NRM networks through development of

> partnerships, shared aspirations and continual learning, including learning from peers (NRCMA 2006b p.31).

The following excerpts from the CAP further highlight the importance placed on this theme within the document:

> The ability of people to respond to new information, to adapt and change to new NRM practices, and to plan, implement and monitor on-ground works is dependent on engaging and supporting the community in the CAP processes and projects. The emphasis is placed on building human and social capital, and thus achieving an ethic of sustainable NRM across the whole community (ibid. p.29).
>
> Lack of continuity in regional NRM agencies and delays in funding in the past have brought about a degree of uncertainty and eroded confidence within community networks, resulting in increased levels of cynicism about the delivery of regional NRM. [This has led to] pressure on NRCMA to engage community and provide continuity of support in delivery of regional NRM and develop the confidence and trust of the community in regional NRM processes (ibid. p.32).
>
> In reaching targets, the roles of groups cannot be overestimated. This can be through physical work on-ground or by providing a point for information exchange between individuals and organisations. Peer motivation and joint achievement is encouraged through grouping on an area or on an interest basis (ibid. p.12)

This emphasis was reiterated recently as follows in the CMA's Investment Program for 2008-09:

> Previous funding for Northern Rivers CMA has focussed on achieving a well resourced, competent community based NRM industry, well informed land managers with access to incentive and market based funding schemes and strong links to both local and state agency natural resource managers. The NRCMA's Community catchment target underpins the whole CAP delivery process. To this end considerable resources have been placed into delivering this target. … Over the next four years of this Investment Program, priorities in terms of the CAP and investment include: a continued emphasis on community engagement …The IP [Investment Program] will invest in [the] regional community to enhance their knowledge and capacity to plan and implement NRM programs (NRCMA 2008 pp.8, 9, 10).

### 4.4.2 Views of CMA staff

This emphasis appears to be widely accepted among CMA staff in the other themes. Funding for the Community Theme covers the salary costs of Community Support Officer (CSOs) as well as the costs of projects specifically focused on community capacity building. An officer from the Water Theme observed:

> *I think we all identify the need for the CCB [community capacity building] component to be funded, because we rely quite heavily on that network. Without them we could just another government funding scheme, and just advertise in the paper and see who applies. But the way it's set up, it allows you to go your local Landcare office, have a bit of a talk to the CSO who can say, 'Oh yeah, they're the sorts of things that suit you. The CMA's running these programs at the moment'. It's their job to know what's going on. And when we release a program – say the river-reach program – we would send out advice to the CSO, asking them to notify their constituents.*

*They have a newsletter and stuff like that, so it's part of the information pathway for our programs.*

Employment of the CSOs is outsourced by the CMA, and they are often accommodated in offices of Landcare or other similar local organisations. CSOs are responsible for community capacity building within a defined geographic area across the whole range of themes. Unlike with the other themes, a specific team of staff is not assigned specifically to managing the Community Theme. One rationale for this was 'everyone does community stuff'.

A program logic has been developed for the Community Theme, as is the case for the other themes. In addition, the program logics for the other themes each include a generic community engagement logic. Even so, it was observed that:

*… we're not terribly sophisticated in terms of even how we define community engagement and community capacity. Different staff have got different levels of knowledge and sophistication, but I think sometimes it's really quite superficial … I've heard things said like, 'We've done enough engagement. Now we'll just do the on-ground work', as if they're separate things.*

Despite this program logic for community capacity building and community engagement, the CMA still struggles in rationalising its substantial investment in this area. An officer from the Biodiversity Theme commented, for instance:

*It might be for reasons of community engagement that you work on a project of five hectares when straight economic rationalism would say you should work on 50. And when a politician asks us what we've achieved, 50 hectares sounds a lot better than five. So yeah, there's a problem of how you get the message across for why we do things to build community capacity.*

The problem of justifying investments in community capacity building was explained as follows:

*The only tools we've got at the moment [for justifying CCB investments] are the Standard Outputs that the Australian Government gives us to report against; that's what they invest in. Those measures include the number of engagement events run, or number of newsletters circulated, which are not really definitive measures of community engagement. … Measures for community engagement are something that everyone has been struggling with over 20 years of NRM. How do you report that sort of stuff, how do you justify the case?*

Given the challenges that CMA staff face in justifying substantial investment in community capacity building, CMA decisions regarding the level investment in this theme are influenced considerably by Board support for this theme.

*The Board members play quite a role in bringing their gut-feeling, or whatever it is, to our process. This year we divided up our budget in what we thought was a pretty good way, but the Board just turned around and said, 'No. We think the community theme needs more support this year'.*

This reflects the Board's role as representing the views of the regional community, and thus in having a role in refining recommendations made by the NRCMA's staff.

### 4.4.3 Some related equity considerations

Equity in allocating investment funds within the regional population appears to be a particular concern of the CMA Board in respect of pursuing effective community engagement. As one staff member observed:

> *The Board members are at the front in pushing for equity between Aboriginals and the rest. And everything we come up with, there's a Board member asking whether some part of the region is getting its share. So we've constantly got to balance geographical, social and other interests.*

Equity considerations also come into play in deciding how base-level funding should be allocated between themes or projects when there is a reasonable expectation that some of these themes or priorities will subsequently obtain further funding from competitive funding sources (regardless of whether the funds would be obtained by the NRCMA or one of its partners). This is an issue because other investors do not consult with the NRCMA regarding what they will invest in, thus creating the potential for duplication of investment in addressing some issues. The Board and senior management of the NRCMA are likely to increasingly face this challenge as the competitive funding arrangements under the Caring for Our Country program become more fully implemented. The Board and senior management have adopted a philosophy that decisions over allocating base-level funds should not disadvantage partners or reduce their incentives to apply for additional funds. In some appropriate cases, however, the Board and senior management have adjusted the allocation of base-level funding to provide for more efficient outcomes.

## 4.5 Delivering integrated catchment management

Staff of the NRCMA were asked how they apply the philosophy of integrated catchment management (ICM) when evaluating different investment options. A typical response was, 'With difficulty, actually'. One of the reasons given for this difficulty was the lack of a dataset and associated computer software that would allow systematic exploration of integration opportunities to occur. Hope was expressed that the *Tools2* decision support framework would help to overcome this barrier to integration across themes.

Another reason given for the difficulty of applying ICM principles was 'the theme basis of preparing the CAP. When we wrote the CAP, we ran off and set up our priorities separately'.

Nevertheless, processes have been developed to identify opportunities for integrated cross-theme projects. For instance, a project integration team, made up of the theme leaders, undertook a review of projects being proposed for the 2008-08 Investment Program to identify opportunities for linking and co-funding projects from different themes. Given the reduction in base-level funding for this year, however, and the consequent reduction in the number and geographic extent of projects, there were few instances where areas prioritised by one theme overlapped the areas prioritised by other themes. Even so, the process worked well in identifying the few opportunities for integration that did exist, and also in developing proposals for integrated projects for possible submission to the Caring for Our Country program or other competitive funding opportunities.

Aside from the efforts to integrate investments by the NRCMA's different themes, integrated projects have arisen from its participation in networks and partnerships. In these cases, the NRCMA is only one of multiple investors with a stake in addressing a natural resources issue, and integration occurs as a result of negotiation between the partners rather than from up-front planning by the NRCMA.

Examples of this occurring are the Clarence Floodplain and Estuary Partnership and the Dorrigo Partnership.

New incentive delivery models proposed for 2008-09 will focus on projects associated with a single theme. Depending on the objectives of these projects, however, they may still address cross-theme issues. Opportunities to integrate these projects with other projects focussed on other themes will also arise in some cases during the process of project delivery. As one NRCMA officer observed, 'Integration does not have to be all orchestrated from the CMA as only one player in the equation'.

Even so, property management planning, as well as subcatchment planning, offers a potential means of integrating the NRCMA's investments in a more planned manner. Such plans identify how different actions on a property, or in a subcatchment, can be linked with other actions to deliver natural resource outcomes more efficiently than would otherwise be possible. Again, however, the base-level funding available to the NRCMA has only been sufficient for property and subcatchment plans to be prepared for part of the region – the tablelands landscape has been targeted in particular. Hence, the potential of such plans to facilitate integrated delivery of NRCMA projects is limited at this stage to only part of the region. Meanwhile, the NRCMA faces an ongoing challenge in securing the funding it needs to help landholders implement the plans that have been developed, as well as to maintain the other capacities (e.g., knowledge, relationships and trust) needed for this implementation to occur.

## 4.6 Experiences with, and views on, tools for making investment decisions

### 4.6.1 Experiences

The CMA has applied decision-making tools in a number of instances to provide an objective basis for ranking projects in terms of their merit for funding. For the Bush Recovery program, each external bid for funding was scored against the following six criteria: CAP target contribution; site score; term of agreement (years); additionality; priority factor; and risk. An overall score for a bid was obtained by obtaining the product of the individual scores and then dividing this product by the total amount of funds requested in the bid. A similar approach is used under the Soil/Land Resource Theme, although it is applied in this case to rank project concepts devised by staff of the theme.

NRCMA staff also tried on one occasion to develop a structured process for allocation of base-level funds between themes. The Board trialled the framework but found that it did not adequately accommodate some of the issues, such as the need for community capacity building, that it felt needed to be accounted for when deciding allocations. The trial highlighted to the Board and staff the difficulty of developing an 'off the shelf' model that adequately deals with the complicated nature of the investment planning context that they face. Moreover, there was reluctance to persist in developing such a model at the time because of the risk that the model would soon become outdated given the changes in the investment planning context likely to occur as the Caring for Our Country program gains momentum. The NRCMA intends to reassess its processes for allocating funds as the new context becomes clearer.

### 4.6.2 Views on the potential role of economics

The CMA staff interviewed were interested in how economics might assist them make better decisions, and particularly how any economic method might account for the implications of decisions for community capacity. Some relevant comments were:

*It's pretty easy to get the most cost-effective outcome until you begin to deal with the community and all that. A lot of it is, 'Are you giving the money out equitably?' And there is always someone asking whether we should just be chasing natural resource outcomes or whether we should be trying to build community capacities at the same time. That's why we're interested in this project.*

*I like to think our program logic is the introduction of some economic rationalism to how we come up with outcomes, outputs, and where the community fits into decisions.*

*Assuming that there's some sort of base-level of some money our CMA has at its disposal to keep all those pots on the stove simmering, some process to help think through how that occurs will be pretty cool. Especially how you divvy out that base-level money to the social side of things.*

## 4.7 Closing remarks

The NRCMA has evolved a distinctive business model which reflects the situation in this region where the CMA is only one of many organisations with a focus on enhancing the region's natural environment, and where the demand for financial help in undertaking on-ground NRM investments considerably exceeds the supply. Accordingly, the business model places emphasis on using base-level funding to (i) motivate other organisations to work with the NRCMA in implementing the region's CAP in a coordinated manner, and (ii) strengthen the capacity of community groups and other organisations to compete for other sources of NRM funding. While the NRCMA is committed to this approach, it acknowledges that this commitment is hard to justify from a narrowly economic perspective.

The rich diversity of stakeholder groups in this region also sets it apart somewhat from many other NRM regions in NSW. The NRCMA responded to this diversity under the NHT2 version of the regional delivery model by seeking wherever possible to tailor its methods of delivering programs and projects according to the unique circumstances of each group. However, the regional delivery model is likely to change significantly under the Australian Government's new Caring for Our Country program. Under this model, the NRCMA will need to target its investments of Australian Government funds at national priorities set by that government. Moreover, the role of CMAs under this program, and the level of base-level funding they will receive (from this program as well as from the NSW Government) in future years, remains unclear. The NRCMA may need to significantly change the way it does business as the shape of its new context firms up.

# 5. OVERVIEW

This chapter presents an overview of findings from the scoping research undertaken in the three nominated NRM regions.

It is evident from the material presented in the previous three chapters that the context in which investment planning has occurred under the regional delivery model has differed significantly between these regions. The Border Rivers – Gwydir and Namoi NRM regions differ markedly from the Northern Rivers NRM Region, for instance, in so far as the economy of the latter region has diversified away from traditional agricultural pursuits to a much greater extent than in the former regions. The greater economic diversification in the Northern Rivers means that financial capacities in this region to invest in NRM have not been impacted as negatively by the long-term decline in the terms of trade for traditional agriculture as have financial capacities in the other two regions. In addition, the process of economic diversification in the Northern Rivers has been associated with diversification within the region's population, including as a result of substantial numbers of people moving to the region to enjoy, among other attributes, its environmental amenities. Moreover, the lifestyle advantages perceived by many people from living in this region compared with inland regions have made it appreciably more likely that people with the various kinds of skills needed for NRM can be found fairly easily in this region, or at least attracted to the region without much trouble.

As a result of these various factors, the NRM 'industry' in the Northern Rivers Region is considerably more vibrant than in the other two regions studied. Consequently, the CMA for this region is a much smaller player in the region's NRM industry than is true for the Border Rivers – Gwydir and Namoi NRM regions. In this way, the greater vitality of the NRM industry in the Northern Rivers Region creates greater challenges for its CMA in delivering on its purpose of coordinating NRM activities across the region along the lines of the region's Catchment Action Plan (CAP). There are many more relevant activities to be coordinated in this region than in the other two regions, and the investment budget for this region's CMA is much less significant relative to the overall level of NRM-related investment occurring in the region. There is greater reason in this region, therefore, for its CMA to strategically allocate a sizable share of its available investment budget to developing partnerships with other players in NRM and providing incentives for them to align their activities more closely with the CAP. And given the high level of demand for NRM funding relative to the CMA's investment budget, there is greater reason for the CMA to allocate its funds to developing the capacities of partner organisations to applying successfully for additional funding that would not necessarily be administered by the CMA.

Key contextual differences also exist between the Border Rivers – Gwydir and Namoi NRM regions. The first of these had previously been viewed by government as a lesser NRM priority than most other NSW regions, with the result that the CMA for this region started off with greater gaps in the information base it needed for strategic investment planning than was the case in many other regions. This region also had less of a 'head-start', compared with the Namoi Region where most of the new CMA's staff transferred from a regional office of the relevant NSW Government agency, in establishing and running the business systems it needed in place to gain momentum in identifying projects to invest in, negotiating contracts, expending funds, administering contracts, and so on. In addition, the ability of the Border Rivers – Gwydir CMA (BRGCMA) to establish such momentum was handicapped appreciably for at least a year as a consequence of competency issues surrounding the CMA's first General Manager, that person's eventual departure, and a lengthy delay in replacing that person. These issues placed the BRGCMA under additional pressures compared with most other CMAs

in expending its investment budgets in accordance with timelines agreed with the Australian and NSW Governments, and consequently made it harder for this CMA to persist in allocating investment funds strategically rather than on a 'demand-led' basis. Nevertheless, this CMA claims that it has now 'caught up' with its agreed expenditure timelines and is as prepared as any other CMA to pursue a strategic approach to deciding how available investment funds should be allocated between competing opportunities. None of this denies that all regional bodies were under pressure to meet expenditure timelines, and that their scope to persist with strategic investment planning was narrowed accordingly.

The investment planning processes followed by the three CMAs have differed in significant ways. The Northern Rivers CMA has defined for itself an annual timetable which it seeks to follow as closely as possible, in order to be proactive when developing investment plans for the upcoming financial year. Nevertheless, delays in governments announcing availability of funding for the upcoming year can upset this routine and cause investment planning to be more reactive than this CMA intended. This CMA tried in one year to use a structured decision framework for deciding how to allocate available funds between its different themes, but its Board found that the framework did not adequately accommodate some of the issues, such as the need for community capacity building, that it felt needed to be accounted for when deciding allocations.

The Border Rivers – Gwydir and Namoi CMAs do not follow a pre-set annual timetable in developing their investment plans for the upcoming financial year, so their formal investment planning processes tend to react to government funding announcements more than is the case for the Northern Rivers CMA. However, the Border Rivers – Gwydir and Namoi CMAs are thinking ahead informally each year about what their priorities for the next year might be. In any case, CMA investments in particular programs are often 'path dependent' in so far as investments in previous years tend to create cost-effective opportunities for further investment (e.g., development of property management plans provides a stronger basis for prioritising on-ground projects, and initiating projects in one area can strengthen community capacities in that area to undertake further projects).

Of the three CMAs, the Border Rivers – Gwydir CMA is the only one yet (in developing its 2008-09 Investment Program) to have allocated its available budget between themes and management targets on the basis of a structured decision-making framework. This framework allocated available investment funds between themes pro rata to aggregated ratings by this CMA's staff regarding the degree to which investment in 'foundational activities' associated with each theme would generate multiple benefits in terms of contributing towards the 13 Priority E4 targets in the NSW State Plan. It also allocated available funds between management targets pro rata to aggregate ratings by this CMA's staff regarding the degree to which investment in foundational activities associated with each management target would create multiple benefits in terms of contributing towards each of the full set of management targets specified in the region's CAP.

Each of the three CMAs recognised the value of structured decision-making frameworks in helping to make their decisions about allocating available funds between themes, management targets, programs and projects more transparent and accountable. Accordingly, they have been enthusiastic participants in the project. They see particular value in the project's aim of incorporating an 'economic way of thinking' within such frameworks, especially if this way of thinking can help them justify more rigorously their investment allocations to community capacity building and partnership building, and help them think through trade offs between shorter-term efficiencies (e.g., from investing in fewer larger-scale projects rather than more smaller-scale projects) and longer-term considerations (e.g., developing community capacities and partnerships to a greater degree by investing in more smaller-scale projects rather than fewer larger-scale projects).

The three CMAs each have designated a distinct theme concerned with community capacity-building, and allocated sizable shares of their available investment funds to programs associated with this theme. The CAPs for each of their regions emphasise community capacity-building as a high priority. However, the Namoi CMA seems more concerned than the other two CMAs to avoid situations where efforts to build community capacities run counter to its priority of investing funds in on-ground projects of the scale needed to deliver observable benefits for natural resource condition. At the same time, the Namoi CMA seems more concerned than the other two CMAs that community perceptions of it being an arm of government may reduce its capacity to elicit cooperation from regional inhabitants and stakeholder groups, and is consequently investing in activities targeted at lessening such perceptions and strengthening local trust that the CMA is committed to pursuing the interests of its region.

The CAPs for each of the three regions also emphasise the importance of looking to achieve multiple benefits from investments wherever possible. This emphasis is consistent with the philosophy of integrated catchment management upon which CMAs in NSW were founded. This philosophy recognises the high degree of interdependence between natural resource problems that may at first appear distinct, and hence the added value to be obtained from coordinating solutions to particular problems so that benefits for the whole interdependent system are multiplied as far as possible. However, each of the three CMAs has found it difficult to account for the multiple benefits of projects when evaluating their worthiness for investment. This difficulty seems to stem most fundamentally from the difficulty of predicting multiple outcomes from a single activity and monitoring the degree to which predicted outcomes actually eventuate. However, other difficulties seem to follow from programs and projects being developed by CMA staff assigned to particular ‘theme teams’, and resulting temptations in some cases to focus exclusively on the benefits of projects relevant to their own theme. The three CMAs are well aware of these problems, and interested in finding ways of overcoming them, but are yet to make as much progress in this area as they would like.

Finally, a further investment planning issue that these CMAs recognised as a current weakness lies in their lack of systematic accounting for differences in the transaction costs of alternative investment opportunities when deciding which opportunities to fund, and when planning how the chosen opportunities will otherwise be resourced (e.g., contracts negotiated, monitored and otherwise administered). This weakness can result in projects turning out to be less attractive than originally envisaged (i.e., when unforeseen transaction costs come into view), and lead also to a need for ad hoc project management arrangements to be fashioned when it become apparent that insufficient allowance has been made for staff support or other transaction costs.

# REFERENCES


Australian Government, 2008. Caring for Our Country: Questions and answers. Online: http://www.nrm.gov.au. Accessed 18 April 2008.

Australian National Audit Office, 2008. Regional Delivery Model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality, Audit Report No. 21 2007-08, Canberra.

BRGCMA (Border Rivers – Gwydir Catchment Management Authority) (2006), Catchment Action Plan, Inverell.

BRGCMA (2007), Annual Report 2006-07, Inverell.

Marshall, G. R., 2005. Economics for Collaborative Environmental Management: Renegotiating the Commons. Earthscan, London.

Marshall, G. R., 2008. Nesting, subsidiarity and community-based environmental governance beyond the local level. International Journal of the Commons, 2(1), 75-97.

Marshall, G. R., in press a. 'Can community-based NRM work at the scale of large regions? Exploring the roles of nesting and subsidiarity. In: Lane, M. B., Robinson, C., Taylor, B. (Editors), Contested Country: Local and Regional Natural Resources Management in Australia, CSIRO Publishing, Melbourne.

Marshall, G. R., in press b. Community-based regional delivery of natural resource management: Building system-wide capacities to motivate voluntary farmer adoption of conservation practices. A report for the Cooperative Venture for Capacity Building in Rural Industries. Rural Industries Research and Development Corporation.

Marshall, G. R., in press c. Polycentricity, reciprocity, and farmer adoption of conservation practices under community-based governance. Ecological Economics.

NCMA (Namoi Catchment Management Authority), 2007. Namoi Catchment Action Plan, Gunnedah.

NRCMA (Northern Rivers Catchment Management Authority), 2006a. Catchment Action Plan: Appendices, Grafton.

NRCMA, 2006b. Northern Rivers Catchment Action Plan, Grafton.

NRCMA, 2008. Northern Rivers Catchment Management Authority Investment Program 2008-09, Grafton.

Pannell, D. J., Marshall, G. R., Barr, N., Curtis, A., Vanclay, F. and Wilkinson, R., 2006. Understanding and promoting adoption of conservation practices by rural landholders, Australian Journal of Experimental Agriculture. 46(11), 1407-1424.

Pannell, D. J., Ridley, A., Seymour, E., Regan, P., Gale G., 2008. Regional natural resource management arrangements for Australian states: Structures, legislation and relationships to government agencies. Version 3.2. Online: http://cyllene.uwa.edu.au/~dpannell/pd/pd0097.htm

Roberts Evaluation Pty Ltd, 2008. Evaluation of Namoi CMA Investment Programs, Melbourne.