

State of the catchments 2010

# Capacity to manage natural resources

## Namoi region

### State Plan target

Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being (ESSW).

There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management (NRM).

### Background

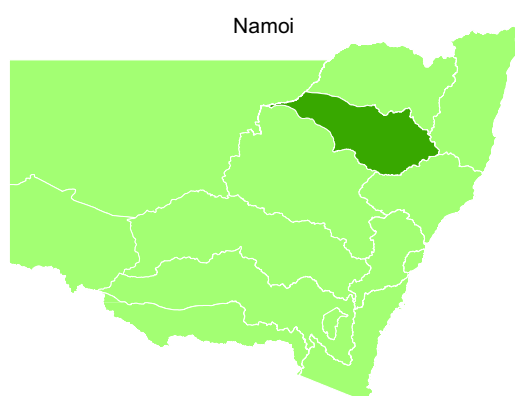
'Assessment – part one' of this report is a generic analysis of the capacity of land managers in the Namoi region to manage natural resources. The same analytical framework, applied in the other NSW regions, was used here. It addresses the NRM manager capacity only and is based solely on data from the 2005 Australian Bureau of Agriculture and Resource Economics (ABARE) survey of broadacre agriculture.

'Assessment – part two' is based solely on information provided by the Namoi Catchment Management Authority (CMA). It addresses State Plan Target 12, '*Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being*' and State Plan Target 13, '*There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management*'. The Namoi CMA considers its report to serve as a benchmark assessment for ESSW and the Namoi community's capacity to manage natural resources in the region.

A detailed technical report describes the methods used to derive the information contained in this report. At the time of publication of the *State of the catchments (SOC) 2010* reports, the technical reports were being prepared for public release. When complete, they will be available on the I&I website: [www.industry.nsw.gov.au/info/mer](http://www.industry.nsw.gov.au/info/mer).

**Note:** All data on natural resource condition, pressures and management activity included in this SOC report, as well as the technical report, was collected up to January 2009.

## Map of the catchment

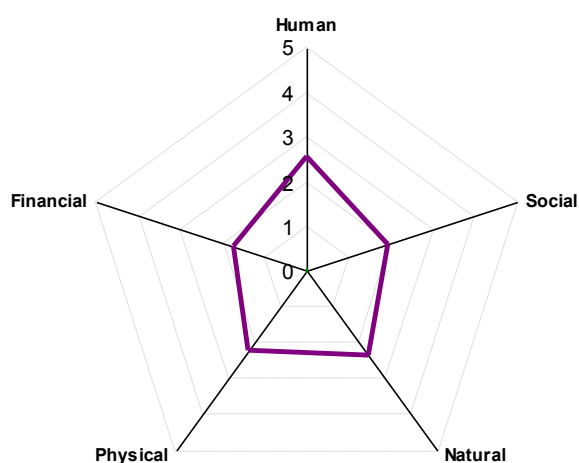


## Assessment – part one

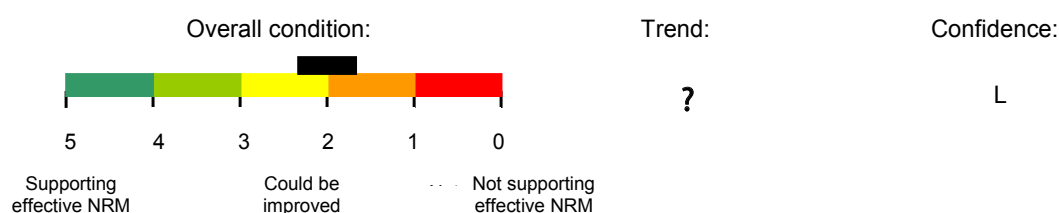
Selected indicators for each of the five capitals – *human, social, physical, natural* and *financial* – were analysed using a livelihoods framework (Nelson et al. 2010a, b). This survey assessed geographical patterns in overall adaptive capacity of land managers to sustain a livelihood across broadacre agricultural sectors. The capacity to manage natural resources is less of a concern for land managers than their ability to sustain a livelihood in the face of changing climatic and economic conditions, and requires detailed discussion with land managers at regional scale.

This method of analysis indicates the general balance of the five capitals across the region. It does not allow for detailed understanding of the drivers of regional capacity, trends in indicators or collective actions that can be implemented to build capacity.

The five capitals are at comparable levels across the Namoi region, although *financial* capital was rated slightly lower than the others. There were notable differences among the indicators of *natural* and *physical* capital; all indicators of *financial* capital were low. The NRM capacity in the region is shown at Figure 1. Various pressures that affect condition indicators are shown in Table 1.







**Figure 1 NRM capacity in the Namoi region**

**Table 1 Pressures on condition indicators in the Namoi region**

= indicates overall condition

Indicator	Condition	Trend	Pressures / Importance of indicator
<b>Human Capital (the skills, health and education that contribute to the capacity to manage natural resources)</b>			
Operator education		?	Level of education of operator ranging from 0 (no formal education) to 5 (tertiary level education) from Australian Agricultural and Grazing Industry Survey (AAGIS).
Spouse education		?	Level of education of spouse (as above).
Self-assessed health		?	Self-assessed health status of operator from ABS survey data.
<b>Social Capital (the family &amp; community support available &amp; networks through which ideas &amp; opportunities are accessed)</b>			
Landcare membership		?	Indicates Landcare membership (AAGIS).
Partners		?	Number of partners running the business (AAGIS).
Internet		?	Proportion of properties with access to internet (AAGIS)
<b>Natural Capital (the productivity of land, water &amp; biological resources from which rural livelihoods are derived)</b>			
Mean PGI		?	Pasture growth index over a decade long period modelled using AussieGrass.
Dams		?	Number of dams on farms (AAGIS).
Vegetation potential		?	The proportion of each farm covered in by remnant native vegetation. Low values indicate higher percentage. From National Land and Water Resources Audit (NLWRA).
<b>Physical Capital (the infrastructure, equipment &amp; breeding improvements to crops &amp; livestock that contribute to rural livelihoods).</b>			
Capital		?	Absolute value of property including house and land, excluding land leased out.

Mean total cash income		?	Total cash income, including off-farm income.
Access to credit		?	Access to credit (equity ratio) plus liquid assets.

Condition		Trend		Data confidence	
	Very good	↑	Improving	H	High
	Good	↔	No change	M	Medium
	Fair	↓	Declining	L	Low
	Poor	?	Unknown		
	Very poor				
	No data				

## Assessment – part two

### Data resources

The Namoi CMA was reluctant to engage in further focus groups, as requested by the NSW monitoring, evaluation and reporting team, due to the existence of two comprehensive reports commissioned by Namoi CMA. These reports contained the relevant baseline information for these two themes.

*The Socio-Economic Assessment of Namoi Catchment Action Plan 2006* (Centre for Agricultural and Regional Economics Pty Ltd) is an economic framework developed for the Namoi CMA. The purpose of this plan is to:

- understand the economic context in which Namoi CMA is operating, including trends in the Namoi region economy
- provide methods whereby Namoi CMA is able to assess the economic value of projects that it funds and their socio-economic impacts.

The report includes the following:

- an overview of the Namoi region and detail on the prospects
- a perspective on the development of the Namoi region up to 2005
- demographic, employment and household data plus the input-output table compiled for 2005–06
- industry data, particularly that related to agriculture
- analysis of the structure of industry and trends in the Namoi region.

*The Namoi Catchment Management Authority Stakeholder and Community Benchmarking Study 2007* (IPSOS Consultants) is an independent study, measuring:

- attitudes towards and perceptions of the Namoi CMA
- the impact the CMA is having across the region
- current land management practices being undertaken to address key NRM issues.

One of the key tasks of this study was to establish Performance Indicators (PIs) that could be tracked over time and linked to measures, eg awareness. The study methodology involved a mix of

workshops and interviews (both in-depth and telephone) with over 700 individuals participating across the Namoi region.

## **Criteria and performance indicators**

In the interest of brevity, a selection of the most relevant criteria and PIs from the above reports was used, and results recorded from each.

### ***Criteria 1: Demographics and employment***

#### ***PI – employment and unemployment***

As of 2002, there has been a rise in employment. This follows on from a decade of employment decline. This increase in employment is most likely a result of 'in-migration' (people moving to, in this case, the Namoi region). Given the ageing population, this employment increase is unlikely to continue.

There has been little change to unemployment. The 2005 unemployment rate for the Namoi region (9.1 per cent) was almost twice that of the state and country averages (5.3 per cent respectively).

#### ***PI – age profile***

A high proportion of the Namoi population are 'baby boomers' (people born between the mid-1940s and mid-1960s) and are now approaching retirement. The proportion of baby boomers is higher in the Namoi region than for NSW, and is a direct result of a lower percentage of the population in the 20–34 age group. A decrease in migration over the next decade will see more people in the region retiring from the workforce, rather than joining it.

#### ***PI – education qualifications***

Some 27 per cent of the Namoi population hold tertiary qualifications against a NSW average of 36 per cent. In terms of certificate-level qualifications, the region matches the NSW figures yet remains below the NSW average for all other qualification categories.

#### ***PI – household income***

There is a lower share of income from employment, investment, superannuation and other income in the Namoi, compared with that of NSW. Additionally, there is also a higher level of income generated by unincorporated businesses and government benefits in the region. This reflects the relatively high importance of owner-operator and self-employed businesses common in regional areas.

The Namoi region also has a higher level of 'dependents' and unemployment than the state average, which serves to increase the relative contribution of government benefits to total income. As of 2005, the average disposable income for the region was \$655/week which is significantly lower than the state average of \$895/week.

#### ***PI – gross regional product (GRP)***

As of 2005, the Namoi region produced a GRP of \$3.081m, representative of about 1 per cent of the NSW GRP per year.

#### ***PI – employment level***

The number of people employed in the Namoi region (40,780) represents 1.2 per cent of the state's total employment, as of December 2005.



### *PI – exports from the Namoi catchment*

Exports from the Namoi region represent 42 per cent of GRP, while the figure for NSW in 2005 was 31 per cent GRP. This indicates that the Namoi regional economy is generally more vulnerable to any volatility or downturn in export markets, compared with NSW as a whole.

### *PI – earnings from employment*

In the Namoi region 53 per cent of household expenditure on consumption was from income from employment. This indicates that many people are heavily dependent on non-employment sources of income to support household consumption expenditure.

## **Criteria 2: Industry employment analysis**

### *PI – location quotient*

The location quotient measures the relative importance of each industry in the region compared with the relative importance across Australia. The results from the reports suggest that primary industry (mostly agriculture) and related industries are dominant in the Namoi catchment. The Namoi primary industries (including processing, marketing and transport) provide 40 per cent of the region's GRP; agriculture provides 16 per cent, with 48 per cent of this derived from the irrigation industries. Additionally, there are few manufacturing industries of significance in the region, apart from those processing agricultural products.

The key industries that support businesses and employ many people with professional qualifications have a low location quotient rank (eg scientific research, property and business services, legal and accounting services). This has the potential to be an important human capital constraint on the economic development of the Namoi region.

Significant elements of the farming sector (both dryland and irrigated) located on the region's alluvial volcanic soils have achieved high productivity growth and subsequently profitability. In these areas, there has also been a high adoption of sustainable and best management practices.

### *PI – shift-share analysis*

Shift-share analysis is a procedure for analysing the growth in each industry relative to total state industry growth, thereby identifying the contribution of each industry to economic growth. The Namoi region has some strongly performing industries, yet little overall growth is being achieved and the region's contribution to aggregate growth has declined over time. Mining has accounted for much of the region's economic growth since 2001.

### *PI – analysis of service delivery*

This analysis indicated that there is poor level of access to the essential services needed to run and grow modern businesses. As a result, future economic growth in the Namoi region will rely heavily on increased mining activity and related service industries.

## **Criteria 3: Trends**

### *PI – reliance on primary industries*

The reliance on primary industries in the Namoi region is likely to continue, especially as mining activities in the area have increased.

### *PI – development of clusters of industry*

There are few opportunities for the development of industry clusters, such as cotton in Narrabri

and cereal and meat processing in Tamworth. Likely future contenders for cluster development are the coal and gas industries, given their expansion in the Gunnedah Basin.

#### *PI – demographic trends*

There is evidence of a significantly ageing population in the region and this is likely to increase through in-migration. In-migration offers potential for economic growth, depending on the age of the migrants. The level of education of the regional workforce is below the NSW average.

#### *PI – infrastructure*

Limited rail access to the port of Newcastle is hampering economic development.

### **Criteria 4: Namoi community issues, values and attitudes**

The overall issues of concern in the Namoi community are water (39 per cent), health (30 per cent) and infrastructure such as road management (28 per cent) (IPSOS 2007). The three most important key environmental issues identified by the community are water management and supply, water allocation and irrigation, and soil degradation and erosion.

### **Criteria 5: Environmental practices**

The performance indicators related to environmental practices, and the percentage of the region's population who adhered to these, are shown in Table 2.

**Table 2 Environmental practice PIs in the Namoi region**

Environmental practices	
PI	% of the Namoi region
Purchased energy-efficient appliances	71
Modified homes/business surrounds to include native plants	70
Considered environmental issue(s) when voting	55
Attended training workshops, seminars, field days or watched films related to NRM	49
Tried to encourage others to change harmful practices	49
Participated in local development or environment issues with the aim of protecting or improving the environment	36
Taken part in Landcare, Bushcare, tree planting or other restoration project	
Attended information session or training about cultural heritage	12

From IPSOS (2007)

#### *PI – environmental concerns*

Responses to this PI varied between local government areas across the region. In the Tamworth area, residents listed greater concern for recycling (8 per cent) and lack of trees (16 per cent) than for water allocation (10 per cent). Walgett residents indicated a high level of concern for the

impacts of land clearing on native vegetation (32 per cent), native vegetation legislation (15 per cent) and weed infestation (26 per cent). Concerns on the impacts of mining were more common in the Liverpool Plains (39 per cent) and Gunnedah (21 per cent) districts.

*PI – consideration of current state of the natural resources in the region*

Interviewed participants were asked for their opinion of the condition status of the local natural resources. Some 57 per cent believed natural resources to be in pretty good condition, although most of these respondents were primary producers. Town residents were the least likely to consider the region's natural resources in good condition.

*PI – agreement that Aboriginal people can offer valuable alternative solutions to managing our natural resources*

The Namoi community was divided over this issue, with only 50 per cent of respondents agreeing with the above statement. Town residents were slightly more accepting of the value of Aboriginal land management.

**Criteria 6: Information dissemination**

Table 3 outlines the various sources whereby the community receives information regarding NRM.

**Table 3 Source of NRM information in the Namoi region**

How the region's community gains the bulk of its NRM information	
Source	% of the Namoi region
Local press/newspapers/rural weeklies	50
Television	40
Radio	16
Internet	13
Direct mail	11
Groups	9
Speaking with someone face-to-face	7

From IPSOS (2007)

**Criteria 7: External NRM funding**

There was overwhelming support for financial assistance for farmers to undertake conservation activities (95 per cent of interviewees). Generally, respondents believed that farmers knew how to best manage natural resources on their farms (73 per cent).



## Management activity

The State Plan NRM targets are being addressed through state, regional and local partnerships. The Catchment Action Plans (CAPs) and investment programs that support them are the key documents that coordinate and drive the effort to improve natural resources across NSW. The CAPs describe the whole-of-Government approach to address each of the state-wide targets at the regional level. The Namoi CAP can be found at [www.namoi.cma.nsw.gov.au](http://www.namoi.cma.nsw.gov.au)

Monitoring ESSW is an evolving field for government and, as such, monitoring work has been developed to mesh with national approaches. Fieldwork has gathered qualitative data on the impact of CMA actions and also larger scale government investments in NRM. Monitoring occurs through several processes, including key stakeholder focus groups and interviews, with larger community samples improving reliability where possible.

### State level

The State Plan target requirement is to 'contribute more effectively to natural resource investment decision-making achieving socio-economic outcomes'. The State Government aims to achieve this through improved priority identification and decision-making capacity of CMAs and agencies. A socio-economic training module, designed to extend Industry & Investment NSW's (I&I) monitoring, evaluation, reporting and improvement processes, is currently being developed. I&I is working with several CMAs and state target themes to ensure the effectiveness of this module.

Other socio-economic activities being undertaken at the state level include:

- developing common guidelines for country-wide socio-economic analysis
- identifying Aboriginal cultural heritage assessment priorities and progress assessments to assist land-use planning and NRM investment decision-making
- implementing the Aboriginal BioBanking Program
- development of a state-wide Aboriginal Land and NRM Action Plan 'Healthy Country – Healthy Communities' – this will assist in developing clear policies, principles and tools to improve socio-economic outcomes for Aboriginal people through enhanced capacity to participate in land management and NRM
- the Aboriginal Heritage Mapping and Assessment Program, which is a whole-of-Government program that provides a coordinated and consistent approach to collecting, managing and using spatial information for Aboriginal heritage values – the program incorporates cultural mapping standards, regionally based assessment and appropriate management of Aboriginal information. It aims to develop inter-agency priorities and key deliverables for Aboriginal heritage information, assessment and mapping.

### Regional level

The Namoi CMA is undertaking the following regional activities in relation to the socio-economic target:

- scenario planning
- community consultation
- Namoi 2030 report.

## Local level

Other groups undertaking significant work in the region include:

- Liverpool Plains Land Management Committee and Namoi CMA Industry & Investment NSW partnership, who are providing drought/community support workshops
- Liverpool Plains Land Management Committee who is providing Resilience in Rural Communities program workshops.

## Further reading

CARE 2006 *Socio-Economic Assessment of Namoi Catchment Action Plan 2006*, Centre for Agricultural and Regional Economics Pty Ltd.

IPSOS 2007 *Namoi Catchment Management Authority Stakeholder & Community Benchmarking Study 2007*, IPSOS Consultants.

Nelson R, Kokic P, Crimp S, Meinke H & Howden M 2010a, 'The vulnerability of Australian rural communities to climate variability and change: Part I – Conceptualising and measuring vulnerability', *Environmental Science & Policy* 13: 8-17.

Nelson R, Kokic P, Crimp S, Martin P, Meinke H, Howden M, Devoil P & Nidumolu U 2010b, 'The vulnerability of Australian rural communities to climate variability and change: Part II – Integrating impacts with adaptive capacity', *Environmental Science & Policy* 13:18-27.

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