

National Action Plan for Salinity and Water Quality

Social and Economic

State-level Investment Project SE01

Regional Agricultural Profile Queensland Murray Darling NRM Region

Kylie Heather and Beth Clouston

March 2006



The National Action Plan for Salinity and Water Quality (NAPSWQ) is a joint Australian and Queensland Government initiative that encourages governments and regional communities to work together to address salinity and water quality issues in priority catchments throughout Queensland. This document has been produced under the NAPSWQ using Australian and Queensland Government financial support.

Project team

Kylie Heather and Beth Clouston

Contact details

For further information or copies, please contact:

Beth Clouston

Department of Natural Resources, Mines and Water

Telephone: (07) 3224 7734

Email: Beth.Clouston@nrm.qld.gov.au

This document is also available for viewing and downloading from the regional NRM website:

www.regionalnrm.qld.gov.au/research_sips/sips/social_economic/assistance.html

This report may be cited as:

Heather, K, Clouston, B (2006). ***Regional Agricultural Profile: Queensland Murray Darling NRM Region*** Department of Natural Resources, Mines and Water, Brisbane

QNRM 06281

ISSN numbers

Copyright

© The State of Queensland, Department of Department of Natural Resources, Mines and Water 2006.

The Queensland Government supports and encourages the dissemination and exchange of information; however, copyright protects this document. The State of Queensland has no objection to this material being reproduced or made available online or electronically, provided it is for your personal, non-commercial use, or use within your organisation; this material remains unaltered; and the State of Queensland is recognised as the owner.

Disclaimer

Any views and conclusions expressed in this document are those of the author and may not necessarily represent the Department of Natural Resources and Mines nor government views or policy. Any decisions made by any parties based on the information provided in this document are solely the responsibility of those parties.

TABLE OF CONTENTS

INTRODUCTION	1
Location of the Queensland Murray Darling NRM region	1
Matching available data to regional NRM bodies	1
SOCIAL AND DEMOGRAPHIC PROFILE	4
Population	4
Estimated resident population	4
Population and age structure	4
Employment	5
Employment by Industry	5
Employment within Industries	6
Employment by agricultural sector	8
AGRICULTURAL PROFILE	11
Introduction	11
Commodities	11
Pastures and grasses	11
Crops	12
Livestock	13
Livestock products	13
Agricultural practices	14
Cultivation techniques	14
Treatment of stubble	15
Fertiliser use	16
Soil conditioner use	17
Area irrigated	18
NATURAL RESOURCE MANAGEMENT PROFILE	19
Fencing to exclude grazing	19
Seedlings and trees planted	20
CONCLUSION	20

LIST OF TABLES

TABLE 1: AREA OF STATISTICAL LOCAL AREA INCLUDED IN THE QUEENSLAND MURRAY DARLING NRM REGION	3
TABLE 2: ESTIMATED RESIDENT POPULATION – QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001, 2004	4
TABLE 3: EMPLOYMENT BY INDUSTRY – QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	5
TABLE 4: EMPLOYMENT - AGRICULTURE, FORESTRY AND FISHING - QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	6
TABLE 5: EMPLOYMENT – MINING - QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	6
TABLE 6: EMPLOYMENT - MANUFACTURING - QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	7
TABLE 7: EMPLOYMENT - ELECTRICITY, GAS AND WATER - QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	7
TABLE 8: EMPLOYMENT - TRANSPORT - QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	8
TABLE 9: EMPLOYMENT BY AGRICULTURAL SECTOR – QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001	9
TABLE 10: VOLUME AND VALUE OF PASTURES AND GRASSES, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	11
TABLE 11: VOLUME AND VALUE OF CROPS, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	12
TABLE 12: VOLUME AND VALUE OF LIVESTOCK, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	13
TABLE 13: VOLUME AND VALUE OF LIVESTOCK PRODUCTS, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	13
TABLE 14: CULTIVATION TECHNIQUE, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	14
TABLE 15: TREATMENT OF STUBBLE, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	15
TABLE 16: FERTILISER USAGE, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	16
TABLE 17: SOIL CONDITIONER USED, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	17
TABLE 18: AREA IRRIGATED, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	18
TABLE 19: FENCING TO EXCLUDE GRAZING, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	19
TABLE 20: TREE SEEDLINGS PLANTED, QUEENSLAND MURRAY DARLING NRM REGION, 2000-01	20

LIST OF FIGURES

FIGURE 1: QUEENSLAND MURRAY DARLING NRM REGION	1
FIGURE 2: QUEENSLAND MURRAY DARLING NRM REGION SHOWING EACH LOCAL GOVERNMENT AREA	2
FIGURE 3: POPULATION AND AGE STRUCTURE – QUEENSLAND MURRAY DARLING NRM REGION, 1996, 2001, 2004	4

Regional profile for the Queensland Murray Darling NRM region

Introduction

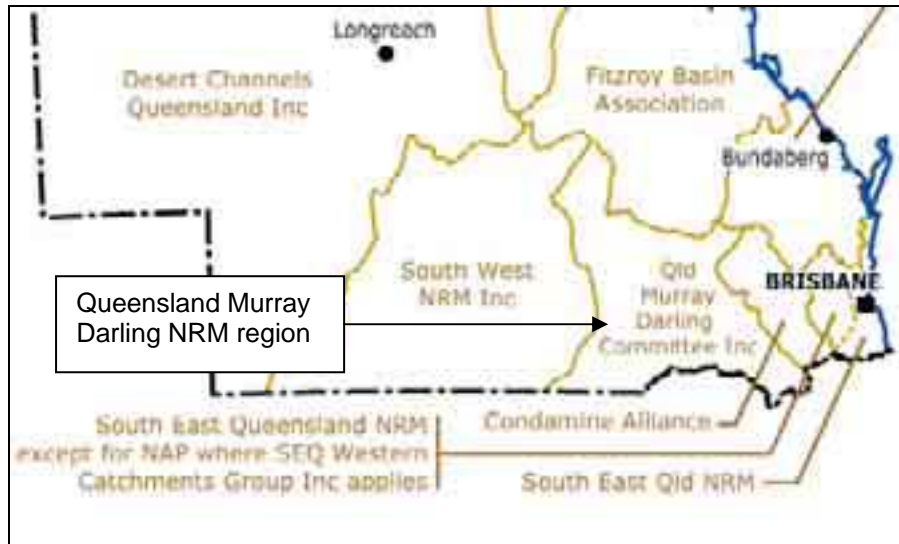
This report provides a basic social, demographic and agricultural regional profile for the Queensland Murray Darling NRM region based on the information provided by the Queensland Regional Bodies Information System (QRBIS). The information provided in QRBIS is based on the 2000-01 Agricultural Census, the 1996 and 2001 Census of Population and Housing, and the 2004 Population Survey. This regional profile for the Queensland Murray Darling NRM region is designed to provide both a social and an agricultural profile of the region, and will also provide a baseline against which information from the 2005-2006 Agricultural Census can be compared. It is anticipated that future census information will be provided by the Australian Bureau of Statistics to match the boundaries of the natural resource management regions, making it easier to compare future data to the 2000-01 data presented in this report.

The information presented in this report includes; population and age structure, employment, agricultural commodities produced in the region, agricultural practices used, and some data for natural resource management practices.

Location of the Queensland Murray Darling NRM region

The Queensland Murray Darling NRM region includes all lands drained by the Maranoa and Balonne Rivers and the Condamine River and its tributaries excluding and west of Chinchilla and Tara Shires (see figure 1 below).

Figure 1: Queensland Murray Darling NRM region



Matching available data to regional NRM bodies

Data from the various sources used in this report is collected and provided at different geographic levels. For example, the Population and Housing Census is reported at the finest level, the collection district, while the Agricultural Census is reported at the higher statistical local area level. Outside of the metropolitan area the statistical local area level roughly equates to local government areas. On the other hand, regional NRM body boundaries are much greater in scale and based roughly on catchment boundaries. The challenge is then to match (or concord) data collected based on administrative boundaries to the regional NRM body boundaries.

Regional Agricultural Profile – Queensland Murray Darling NRM Region

The data reported in QRBIS has been concorded to the regional NRM body boundaries where possible. While it has been possible to match the Population and Housing Census to the regional NRM boundaries based on collection districts this has not been possible for the Agricultural Census based on statistical local areas.

Figure 2: Queensland Murray Darling NRM region showing each local government area



Figure 2 above shows the local government areas contained within the Queensland Murray Darling NRM region. These local government areas contain two statistical local areas which fall wholly within the boundary of the region and twelve partially (see Table 1). We had to assume that agricultural production is spread uniformly over the statistical local area, and agricultural production has been allocated to regional NRM bodies on this basis. Where less than 10% of a statistical local area fell within the region, however, the data from this statistical local area was not included. Where more than 90% of the statistical local area fell within the region, 100% of the data from this statistical local area was included. Table 1 below shows the statistical local areas that are contained within the region and indicates the percentage of each one that has been included within the boundaries of the region for the purpose of this report. Table 1 also shows where a statistical local area has been added or subtracted.

It should be noted that some ground truthing of land uses in the statistical local areas that sit on the boundary of the Queensland Murray Darling NRM region has been conducted using geographic information systems (GIS). Land use data from 1999 was used. Where ground truthing has identified that a specific land use sits mainly within or outside a statistical local area this will be indicated in a footnote to the tables in the agricultural profile section of this report.

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Table 1: Area of statistical local area included in the Queensland Murray Darling NRM region

SLA	Percentage of SLA included in region	Percentage included in this report	Percentage added to	Percentage added from
Balonne	68.2%	68.2%		
Bendemere	95.1%	100%		4.9% from Fitzroy
Booringa	59.2%	59.2%		
Bungil	51.3%	51.3%		
Chinchilla	11.4%	11.4%		
Goondiwindi	99.3%	100%		
Inglewood	99.9%	100%		
Millmerran	59.2%	59.2%		
Murilla	96.5%	100%		3.2% from Condamine Alliance
Roma	100%	100%		
Stanthorpe	99.6%	100%		
Tara	91.9%	100%		8.1% from Condamine Alliance
Waggamba	100%	100%		
Waroo	90.1%	100%		9.9% from South West

Social and demographic profile

Population

Estimated resident population

The estimated resident population of the Queensland Murray Darling NRM region at 30 June 2004 was 52,734. The Queensland Murray Darling NRM region represented 1.4% of the total population of Queensland; while the area of the Queensland Murray Darling NRM region represented 5.9% of the total area of Queensland. Of the total population in 2001 52% were male and 48% were female.

There was a population increase in the Queensland Murray Darling NRM region between 1996 and 2004 of 0.6% per year. This population increase was much less than the total population increase per annum for Queensland.

Table 2: Estimated resident population – Queensland Murray Darling NRM region, 1996, 2001, 2004

	Region	Queensland	Region as a percentage of Queensland
Area (km ²)	102,913	1,734,157	5.9%
1996	50,435	3,338,721	1.5%
2001	52,277	3,635,121	1.4%
2004	52,734	3,882,037	1.4%
Annual average change 1996-2004 (%)	0.6	2.0
Annual average change 2001-2004 (%)	0.3	2.3

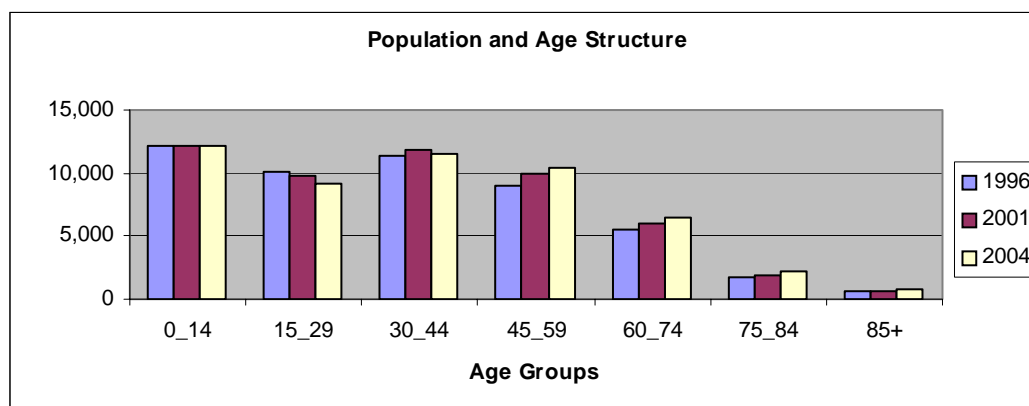
(a) The area for the region was calculated by adding together the portion of each SLA that fell within the region.

Source: ABS data, Census of Population and Housing 1996, 2001; ABS Population Survey 2004 (as reported in QRBIS).

Population and age structure

The data for population and age structure indicates an ageing population in the Queensland Murray Darling NRM region; there was a slight decline in population in the younger age groups between 1996 and 2004 and an increase in the older age groups between 1996 and 2004. In younger age groups the 0-14 age group decreased by 0.4%, the 15-29 age group age group decreased by 8.2%, and the 30-44 age group actually increased slightly by 1.3%. In the older age groups the 45-59 age group increased by 16.5%, the 60-74 age group increased by 16.2%, and the 75-84 age group increases by 29.1%.

Figure 3: Population and age structure – Queensland Murray Darling NRM region, 1996, 2001, 2004



Source: ABS data, Census of Population and Housing 1996, 2001; ABS Population Survey 2004 (as reported in QRBIS).

Employment

Employment by Industry

Table 3 below shows the percentage of the Queensland Murray Darling NRM region labour force employed in each industry. The industry employing the greatest percentage of the labour force in 2001 was the Agriculture, Forestry and Fishing industry (29.9%). The second largest employer in the Queensland Murray Darling NRM region in 2001 was the Retail Trade industry (11.8%), and the third largest employer was the Health and Community Services industry (8%).

The number of people employed increased between 1996 and 2001 in 15 out of 17 of the industries. In particular there were increases in the construction industry (50%) and the manufacturing industry (33%).

Table 3: Employment by Industry – Queensland Murray Darling NRM region, 1996, 2001

Industry	1996		2001		1996 to 2001 % change
	No. employed	% ^a	No. employed	% ^a	
Agriculture, Forestry and Fishing	6,681	31.7%	7,164	29.9%	7%
Mining	201	1.0%	217	0.9%	8%
Manufacturing	892	4.2%	1,188	5.0%	33%
Electricity, Gas and Water Supply	174	0.8%	179	0.7%	3%
Construction	1,079	5.1%	1,621	6.8%	50%
Wholesale Trade	1,037	4.9%	1,100	4.6%	6%
Retail Trade	2,448	11.6%	2,830	11.8%	16%
Accommodation, Cafes and Restaurants	977	4.6%	1,053	4.4%	8%
Transport and Storage	923	4.4%	936	3.9%	1%
Communication and Services	330	1.6%	267	1.1%	-19%
Finance and Insurance	337	1.6%	296	1.2%	-12%
Property and Business Services	0	0.0%	1,107	4.6%	-
Govt. Admin and Defence	1,174	5.6%	1,041	4.3%	-11%
Education	1,602	7.6%	1,642	6.9%	2%
Health and Community Services	1,708	8.1%	1,921	8.0%	12%
Cultural and Recreational Services	205	1.0%	217	0.9%	6%
Personal and Other Services	552	2.6%	563	2.4%	2%
Not Stated	495	2.4%	516	2.2%	4%
Non Classifiable	247	1.2%	86	0.4%	-65%
Total	21,062	100%	23,944	100%	

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region labour force employed in each industry.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Employment within Industries

The following tables provide further detail about the primary industries and those industries that provide support to the primary industries in the Queensland Murray Darling NRM region. Table 4 provides a breakdown of the Agriculture, Forestry and Fishing industry and agriculture (92%) was clearly the dominant employer in this industry in 2001. The services to agriculture, hunting and trapping sector was the second largest employer in this sector in the Queensland Murray Darling NRM region in 2001.

Table 4: Employment - Agriculture, Forestry and Fishing - Queensland Murray Darling NRM region, 1996, 2001

Agricultural	1996		2001		1996 to 2001 % change
	No. employed	%	No. employed	%	
Agriculture	6,061	91%	6,603	92%	9%
Services to Agriculture Hunting & Trapping	438	7%	400	6%	-9%
Forestry and Logging	110	2%	117	2%	6%
Commercial Fishing	7	0%	3	0%	-57%
Agriculture Forestry & Fishing, undef	65	1%	41	1%	-37%

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region's Agriculture, Forestry and Fishing labour force that was employed in each of the separate sectors.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Table 5 provides more detail about employment in the mining industry in the Queensland Murray Darling NRM region in 2001. Oil and gas extraction (40%) was the largest employer in the mining industry, followed by the services to mining sector (28%).

Table 5: Employment – Mining - Queensland Murray Darling NRM region, 1996, 2001

Mining	1996		2001		1996 to 2001 % change
	No. employed	%	No. employed	%	
Coal Mining	5	2%	8	4%	60%
Oil and Gas Extraction	57	28%	87	40%	53%
Metal Ore Mining	3	1%	14	6%	367%
Other Mining	75	37%	47	22%	-37%
Services to Mining	58	29%	61	28%	5%
Mining, undefined	3	1%	0	0%	-100%

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region's mining labour force that was employed in each of the separate sectors.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

The main employer in the manufacturing industry in the Queensland Murray Darling NRM region in 2001 was the food, beverage and tobacco manufacturing sector (31%). The second largest employer in the manufacturing industry was the wood and paper manufacturing products sector (18%).

Table 6: Employment - Manufacturing - Queensland Murray Darling NRM region, 1996, 2001

Manufacturing	1996		2001		1996 to 2001 % change
	No. employed	%	No. employed	%	
Food, Beverage & Tobacco Mfg	286	32%	372	31%	30%
Textile Clothing Footwear & Leather Mfg	52	6%	108	9%	108%
Wood & Paper Products Mfg	240	27%	216	18%	-10%
Printing, Publishing & Recorded Media	67	8%	67	6%	0%
Petroleum Coal Chemical & Ass Prod Mfg	33	4%	43	4%	30%
Non-Metallic Mineral Prod Mfg	32	4%	56	5%	75%
Metal Product Manufacturing	94	11%	84	7%	-11%
Machinery & Equipment Mfg	53	6%	132	11%	149%
Other Manufacturing	26	3%	25	2%	-4%
Manufacturing, undefined	9	1%	85	7%	844%

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region's manufacturing labour force that was employed in each of the separate sectors.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Most employees in the electricity, gas and water industry were employed in the electricity and gas supply sector (72%) in 2001, with the remainder being employed in the water supply, sewerage and drainage services sector (28%).

Table 7: Employment - Electricity, Gas and Water - Queensland Murray Darling NRM region, 1996, 2001

Electricity, Gas and Water	1996		2001		1996 to 2001 % change
	No. employed	%	No. employed	%	
Electricity and Gas Supply	134	77%	128	72%	-4%
Water Supply Sewerage & Drainage Serv	37	21%	51	28%	38%
Electricity Gas Water Supply undef	3	2%	0	0%	-100%

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region's electricity, gas and water labour force that was employed in each of the separate sectors.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Table 8 below provides more detail about employment in the Transport industry. In 2001 the majority of transport industry employees were employed in the road transport sector (60%). The second largest employer in the Transport industry was the rail transport sector (21%).

Table 8: Employment - Transport - Queensland Murray Darling NRM region, 1996, 2001

Transport	1996		2001		1996 to 2001 % change
	No. employed	%	No. employed	%	
Road Transport	462	50%	564	60%	22%
Rail Transport	296	32%	193	21%	-35%
Water Transport	0	0%	0	0%	-
Air and Space Transport	11	1%	13	1%	18%
Other Transport	10	1%	5	1%	-50%
Services to Transport	37	4%	38	4%	3%
Storage	65	7%	23	2%	-65%
Transport & Storage, undef	42	5%	100	11%	138%

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region's transport labour force that was employed in each of the separate sectors.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBS).

Employment by agricultural sector

The Agriculture, Forestry and Fishing industry has been further disaggregated into sectors (see Table 9). The main employers in the Agriculture, Forestry and Fishing sector in the Queensland Murray Darling NRM region in 2001 were the beef cattle farming sector (26.1%), the grain – sheep grain – beef cattle farming sector (13%), the sheep – beef cattle farming sector (9.6%) and the sheep farming sector (9.4%).

There was a large increase in employment between 1996 and 2001 in the beef cattle farming sector. Some of the employees listed under beef cattle farming in 2001, however, may have been listed in agriculture undefined in 1996, which experienced a large decrease between 1996 and 2001. Advice from the ABS suggests that the way in which employment information was coded in 1996 may have differed from the way in which the information was coded in 2001.

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Table 9: Employment by agricultural sector – Queensland Murray Darling NRM region, 1996, 2001

Sector	1996		2001		1996 to 2001 % change
	No. employed	% ^a	No. employed	% ^a	
Livestock Production					
Sheep-Beef Cattle Farming	597	9.0%	687	9.6%	15%
Sheep Farming	402	6.1%	669	9.4%	66%
Beef Cattle Farming	680	10.3%	1859	26.1%	173%
Dairy Cattle Farming	33	0.5%	20	0.3%	-39%
Pig Farming	64	1.0%	78	1.1%	22%
Horse Farming	9	0.1%	10	0.1%	11%
Deer Farming	3	0.0%	3	0.0%	0%
Livestock Farming, nec	49	0.7%	61	0.9%	24%
Other Livestock Farming, undef	6	0.1%	0	0.0%	-100%
Poultry Farming, undef	12	0.2%	5	0.1%	-58%
Poultry Farming (Eggs)	4	0.1%	8	0.1%	100%
Total Livestock Production ^b	1859	28.1%	3400	47.7%	
Crop Production					
Grain Growing	162	2.4%	488	6.8%	201%
Cotton Growing	242	3.7%	593	8.3%	145%
Sugar Cane Growing	2	0.0%	4	0.1%	100%
Horticulture & Fruit Growing, undef	354	5.3%	148	2.1%	-58%
Plant Nurseries	32	0.5%	12	0.2%	-63%
Cut Flower & Flower Seed Growing	17	0.3%	1	0.0%	-94%
Vegetable Growing	36	0.5%	312	4.4%	767%
Grape Growing	43	0.6%	96	1.3%	123%
Apple & Pear Growing	50	0.8%	196	2.7%	292%
Stone Fruit Growing	17	0.3%	74	1.0%	335%
Fruit Growing, nec	49	0.7%	45	0.6%	-8%
Crop & Plant Growing, nec	77	1.2%	85	1.2%	10%
Other Crop Growing, undef	17	0.3%	0	0.0%	-100%
Total Crop Production ^b	1098	16.6%	2054	28.8%	
Services to Agriculture					
Cotton Ginning	53	0.8%	42	0.6%	-21%
Shearing Services	171	2.6%	75	1.1%	-56%
Serv to Agriculre Huntng Trappng undef	0	0.0%	3	0.4%	-
Services to Agriculture, undef	6	0.1%	9	0.1%	50%
Aerial Agricultural Services	16	0.2%	28	0.4%	75%
Services to Agriculture, nec	147	2.2%	177	2.5%	20%
Total Services to Agriculture ^b	393	5.9%	334	5.0%	

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Sector	1996		2001		1996 to 2001 % change
	No. employed	% ^a	No. employed	% ^a	
Forestry					
Forestry & Logging, undef	0	0.0%	3	0.0%	-
Forestry	22	0.3%	60	0.8%	173%
Logging	73	1.1%	37	0.5%	-49%
Services to Forestry	14	0.2%	5	0.1%	-64%
Total Forestry^b	109		105		
Fishing					
Marine Fishing, nec	0	0.0%	3	0.0%	-
Aquaculture	4	0.1%	0	0.0%	-100%
Total Fishing^b	4	1.7%	3	1.5%	
Other					
Grain Sheep Bf Cattle Farm undef	813	12.3%	64	0.9%	-92%
Grain-Sheep Grain-Bf Cattle Farm	531	8.0%	929	13.0%	75%
Hunting & Trapping	42	0.6%	68	1.0%	62%
Agriculture, undef ^c	1769	26.7%	175	2.5%	-90%
Total Other^b	3155	47.7%	1236	17.3%	

nec – not elsewhere classified

(a) The values in this column represent the percentage of the Queensland Murray Darling NRM region Agriculture Forestry and Fishing labour force employed in each sector.

(b) The 'total' rows represent the total number and the total percent of the Queensland Murray Darling NRM region labour force employed in each agricultural sector.

(c) Advice from the ABS suggests that the large decrease in value for agriculture undefined from 1996 to 2001 might be a result of a difference in the way coding was carried out between 1996 and 2001.

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Source: ABS data, Census of Population and Housing 1996, 2001 (as reported in QRBIS).

Agricultural profile

Introduction

The following agricultural profile includes information on the agricultural commodities produced in the Queensland Murray Darling NRM region (pastures and grasses, crops, livestock, and livestock products) and information on agricultural practices (cultivation techniques, treatment of stubble, fertiliser use, and soil conditioner use).

An estimate of the number of agricultural establishments in the Queensland Murray Darling NRM region at November 2005 is 2483 (Australian Bureau of Statistics 2006).

Commodities

Pastures and grasses

Native or naturalised pastures represented 49% of the total agricultural holdings in the Queensland Murray Darling NRM region in 2000-01. Sown Pastures represented 7%, and although pastures cut for hay represented only 0.1% of the total agricultural holdings in the Queensland Murray Darling NRM region they represented 13% of the total area of pastures cut for hay in Queensland.

Table 10: Volume and value of pastures and grasses, Queensland Murray Darling NRM region, 2000-01

Pastures and grasses	Volume		Area		Value		Production of commodity as a percentage of Queensland total		
	t '000	ha '000	% of total ag. holdings in region	\$ '000	% of total ag. value in region	Vol	Area	Value	
Pastures cut for hay	25	7	0.1%	471	0%	9%	13%	1%	
Sown pastures	N/A	702	7%	N/A	N/A	N/A	12%	N/A	
Native or naturalised pasture	N/A	4,725	49%	N/A	N/A	N/A	7%	N/A	

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Crops

The data presented below in Table 11 shows that in 2000-01 in the Queensland Murray Darling NRM region cotton (\$171m) produced the highest value of production. The second highest value of production was produced by cereals for grain (\$135m). The value of cotton produced in the Queensland Murray Darling NRM region in 2000-01 represented 41% of the total value of cotton produced in Queensland in 2000-01, and the value of cereals for grain represented 28% of the total value of cereals for grain for 2000-01.

Table 11: Volume and value of crops, Queensland Murray Darling NRM region, 2000-01

Crops	Volume		Area		Value		Production of commodity as a percentage of Queensland total		
	t '000	ha '000	% of total ag. holdings in region	\$ '000	% of total ag. value in region	Vol	Area	Value	
Cereals for grain ^a	653	610	6.3%	135,418	15%	25%	39%	28%	
Cotton-Irrigated ^{ab}	301	63	0.7%	171,628 ^c	19%	45%	46%	41%	
Cotton-Non-Irrigated	11	9	0.1%	N/A	N/A	15%	19%	N/A	
Crops for hay	36	19	0.2%	N/A	N/A	21%	28%	N/A	
Soybeans	0.9	1	0.0%	429	0%	6%	5%	6%	
Peanuts	0	0	0.0%	1	0%	1%	2%	1%	
Sugar Cane ^{de}	1	0	0.0%	18	0%	0%	0%	0%	
Fruit and nuts ^f	N/A	5	0.0%	37,081	4%	N/A	9%	5%	
Vegetables ^g	N/A	3	0.0%	44,086	5%	N/A	7%	7%	
Total	1,003	710	7.3%	388,661	43%				

(a) Ground truthing has revealed that in 1999 most cereal crops in the Balonne, Booringa and Bungil Shires, and most cotton in the Balonne and Bungil Shires lay within the Queensland Murray Darling NRM region. Most cereal crops in the Chinchilla Shire and most cotton in the Millmerran and Chinchilla Shires lay outside of the Queensland Murray Darling NRM region. Overall the data presented here may underestimate the production of cereal crops in the region, underestimate the production of irrigated cotton in the region, and overestimate the production of non-irrigated cotton in the region.

(b) The values provided for cotton – irrigated and cotton – non-irrigated represent cotton seed and cotton lint values combined.

(c) The dollar value given for irrigated cotton represents the value of both irrigated and non-irrigated cotton.

(d) The values provided for sugar cane represents sugar cane for crushing and sugar cane for plants.

(e) Ground truthing has revealed that in 1999 all sugar cane in the Chinchilla Shire lay outside the Queensland Murray Darling NRM region. The data presented here may therefore overestimate sugar production in the Queensland Murray Darling NRM region.

(f) Ground truthing has revealed that in 1999 most fruit production in the Millmerran and Chinchilla Shires lay outside the region. The data presented here may therefore overestimate fruit production in the region.

(g) Ground truthing has revealed that in 1999 most vegetable production in the Balonne region lay within the Queensland Murray Darling NRM region, while most vegetable production in the Chinchilla and Millmerran Shires lay outside the Queensland Murray Darling NRM region. The data presented here may therefore overestimate the production of vegetables in the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Livestock

The highest value of production for livestock, and for all agricultural commodities, in the Queensland Murray Darling NRM region in 2000-01 was for cattle and calves (\$366m). The value of cattle and calves in the region represented 12% of the total value cattle and calves in the region. The second highest value of production for livestock in the region was for pigs (\$29m); pigs represented 17% of the total value of production for the region. Sheep and lambs (\$13m) in the Queensland Murray Darling NRM region represented 22% of the total value of production for sheep and lambs in Queensland.

Table 12: Volume and value of livestock, Queensland Murray Darling NRM region, 2000-01

Livestock	Number		Value		Production of commodity as a percentage of Queensland total	
	No. of stock '000	\$ '000	% of total ag. value in region	No.	Value	
Cattle & calves	941 ^a	366,601 ^b	40%	8%	12%	
Sheep & lambs	1,636	13,775 ^b	1.5%	19%	22%	
Pigs	88	29,560 ^b	3%	15%	17%	
Poultry	ND	677 ^b	0.07%	0%	0%	

ND – No data or insufficient data.

(a) The value for number cattle and calves represents meat and dairy cattle.

(b) The dollar values given for livestock represent the value of all livestock slaughtered during 2000-01 and not the value of all livestock.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Livestock products

The highest value of production for livestock products in the Queensland Murray Darling NRM region in 2000-01 was for eggs (\$13m). Eggs represented a significant percentage (23%) of the total value of production for eggs in Queensland. Cows' milk production (\$1.5m) produced the second largest value of production for livestock products in the region but only represented 1% of the total value of production for cows' milk in Queensland.

Table 13: Volume and value of livestock products, Queensland Murray Darling NRM region, 2000- 01

Livestock Products	Volume	Value		Production of commodity as a percentage of Queensland total	
	Vol '000	\$ '000	% of total ag. value in region	Vol	Value
Livestock Products					
Wool (t)	7.8	1,372	0.2%	18%	1%
Cow milk production (L) ^a	972	1,574	0%	0%	1%
Eggs (dz)	8,893	13,517	1.5%	23%	23%

(a) Ground truthing has revealed that in 1999 most dairy production in the Balonne, Booringa, Bungil Shires lay within the Queensland Murray Darling NRM region, while most dairy production in the Chinchilla Shire lay outside the Queensland Murray Darling NRM region. Overall the data presented here may underestimate dairy production in the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Agricultural practices

Cultivation techniques

In total 736,521 ha of land was prepared for sowing in the Queensland Murray Darling NRM region in 2000-01. Most of this land was cultivated by either 1 or 2 cultivations (43%) or by another cultivation technique (28%). The land prepared for sowing using no cultivation accounted for 29%. Land prepared for sowing in the Queensland Murray Darling NRM region in 2000-01 with no cultivation accounted for 40% of land prepared for sowing in this way across Queensland. Land prepared for sowing in the Queensland Murray Darling NRM region in 2000-01 with 1 or 2 cultivations accounted for 41% of all land across Queensland prepared for sowing in this way.

Table 14: Cultivation technique, Queensland Murray Darling NRM region, 2000-01

Cultivation Technique	Area cultivated		Cultivation technique as a percentage of Queensland total
	ha '000	% of total area cultivated in region	Area
No cultivation ^a	217	29%	40%
1 or 2 cultivations ^a	313	43%	41%
Other cultivation technique ^a	207	28%	31%

(a) Ground truthing has revealed that in 1999 most cropping in the Balonne, Booringa and Bungil Shires lay within the Queensland Murray Darling NRM region, while most cropping in the Chinchilla and Millmerran Shires lay outside the region. Overall the data presented here may underestimate the area cultivated in the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Treatment of stubble

The most common method for treating crop stubble in the Queensland Murray Darling NRM region in 2000-01 was ploughing stubble into the soil (38%). The second most common method for treating crop stubble was to leave the stubble intact (32%). Although the amount of stubble treated by cool burn accounted for only 6% of the stubble treated in the Queensland Murray Darling NRM region it accounted for the majority (63%) of stubble treated by cool burn in Queensland.

Table 15: Treatment of stubble, Queensland Murray Darling NRM region, 2000-01

Treatment	Area treated		Stubble treatment as a percentage of Queensland total
	ha '000	% of total area treated in region	Area
Stubble ploughed into soil ^a	260	38%	37%
Stubble mulched ^a	70	10%	25%
Stubble left intact ^a	216	32%	39%
Stubble removed by hot burn ^a	7	1%	30%
Stubble removed by cool burn ^a	38	6%	63%
Stubble removed by baling or heavy grazing ^a	61	9%	36%
All other methods ^a	25	4%	31%

(a) Ground truthing has revealed that in 1999 most cropping in the Balonne, Booringa and Bungil Shires lay within the Queensland Murray Darling NRM region, while most cropping in the Chinchilla and Millmerran Shires lay outside the region. Overall the data presented here may underestimate the area of stubble treated in the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Fertiliser use

The volume of fertiliser used in the Queensland Murray Darling NRM region in 2000-01 represented 10% of the total volume of fertiliser used in Queensland. The most common fertiliser used, both in terms of volume and area treated, was urea. This reflects the fact that 7.3% of the region's agricultural holdings were used for cropping.

Totals for hectares treated have not been included in Table 16; if more than one fertiliser was used on one hectare that hectare was counted twice in the agricultural census 2000-01, the total for hectares treated would therefore overestimate the number of hectares treated with fertiliser in the region.

Table 16: Fertiliser usage, Queensland Murray Darling NRM region, 2000-01

Fertiliser	Quantity used		Area treated		Fertiliser use as a percentage of Queensland total	
	t'000	ha'000	% of total ag. holdings in region	Area	Vol	
Urea	27.7	197.2	2.0%	21%	14%	
Ammonium Sulphate	0.3	3.7	0.0%	9%	3%	
Ammonium Nitrate	0.3	1.3	0.0%	8%	7%	
Anhydrous Ammonia	4.9	27.5	0.3%	17%	26%	
Single Superphosphate	1.8	17.1	0.2%	21%	12%	
Double Superphosphate	0.4	4.9	0.1%	33%	19%	
Triple Superphosphate	0.1	0.2	0.0%	2%	3%	
Muriate of Potash	0.9	4.2	0.0%	3%	4%	
Potassium Sulphate	0.1	1.0	0.0%	4%	1%	
Potassium Nitrate	0.2	2.1	0.0%	12%	5%	
Mono Ammonium Phosphate	7.8	166.0	1.7%	48%	46%	
Di Ammonium Phosphate	1.8	38.9	0.4%	22%	8%	
Other	7.1	88.0	0.9%	15%	3%	
Total	53.3	-	-	-	10%	

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Soil conditioner use

Soil conditioners were used in the Queensland Murray Darling NRM region in 2000-01 primarily to correct physical soil problems. The use of gypsum to correct physical soil problems in the Queensland Murray Darling NRM region in 2000-01 accounted for 70% of all soil conditioners used in the region. Gypsum used in the region also accounted for a large percentage (29%) of the total volume of gypsum used in Queensland.

The most common soil conditioner used in the region in 2000-01 for the treatment of soil acidity was lime (19.3%). Lime used in the region in 2000-01 accounted for 8% of the total volume of lime used in Queensland.

Table 17: Soil conditioner used, Queensland Murray Darling NRM region, 2000-01

Soil conditioner	Quantity used	Area treated		Soil conditioner use as a percentage of Queensland total	
		t'000	ha'000	% of total ag. holdings in region	Area
Lime - to correct of stabilise soil acidity ^a	6	3	0.03%	9%	8%
Dolomite - to correct or stabilise soil acidity ^a	2	1	0.01%	13%	13%
Dolomite - to correct physical soil problems ^a	1	1	0.01%	15%	17%
Gypsum - to correct physical soil problems ^a	20	9	0.09%	26%	29%

(a) Ground truthing has revealed that in 1999 most cropping in the Balonne, Booringa and Bungil Shires lay within the Queensland Murray Darling NRM region, while most cropping in the Chinchilla and Millmerran Shires lay outside the region. Overall the data presented here may underestimate the use of dolomite to correct soil acidity and gypsum, and may overestimate the use of lime and dolomite to correct physical soil problems in the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Area irrigated

The area of the Queensland Murray Darling NRM region irrigated in 2000-01 was 88,115 ha. This area represented only 0.9% of the total area of agricultural holdings in the region but represented 16% of the total area of irrigated land across Queensland.

Table 18: Area irrigated, Queensland Murray Darling NRM region, 2000-01

Area			Area irrigated as a percentage of Queensland total
	ha '000	% of total ag. holdings in region	Area
Total area of holding	9,725	100%	7%
Irrigated - total area	88	0.9%	16%
Non-irrigated - total area	9,637	99.1%	7%

(a) Ground truthing has revealed that in 1999 most cropping in the Balonne, Booringa and Bungil Shires lay within the Queensland Murray Darling NRM region, while most cropping in the Chinchilla and Millmerran Shires lay outside the region. Overall the data presented here may underestimate the area irrigated the region.

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Natural resource management profile

Fencing to exclude grazing

The most common stated reason for the construction of fencing in the Queensland Murray Darling NRM region during 2000-01 was to protect creeks and rivers (29%). The second most common reason was to protect remnant native vegetation (13%). The greatest length of fencing constructed in the Queensland Murray Darling NRM region in 2000-01 was for the protection of other undefined areas (51%). The construction of fencing in the Queensland Murray Darling NRM region in 2000-01 to protect remnant native vegetation accounted for 24% of the total fencing constructed for this purpose during 2000-01 in Queensland.

Table 19: Fencing to exclude grazing, Queensland Murray Darling NRM region, 2000-01

Reason	Length		Fencing to exclude grazing as a percentage of Queensland total
	km	% of total length of fencing constructed in region in 2000-01	Length
To protect remnant native vegetation	137	13%	24%
To protect planted trees and shrubs	22	2%	5%
To protect creeks and rivers	311	29%	15%
To protect saline areas	1	0%	1%
To protect other degraded areas	50	5%	9%
To protect other areas	546	51%	16%
Total fencing for all reasons	1,066	100%	

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Regional Agricultural Profile – Queensland Murray Darling NRM Region

Seedlings and trees planted

The most common reason for planting seedlings in the Queensland Murray Darling NRM region in 2000-01 were planted for the purpose of enhancing production (28%). The second most common reasons for planting seedlings in the Queensland Murray Darling NRM region in 2000-01 were for timber and wood pulp (25%), and for the protection of land and water (25%). The number of seedlings planted in the region for enhanced production represented 8% of the total Queensland number of seedlings planted for this reason (9%).

Table 20: Tree seedlings planted, Queensland Murray Darling NRM region, 2000-01

Purpose of Planting	Number planted		Area planted		Seedlings and trees planted as a percentage of Queensland total	
	No. '000	% of seedlings planted in region in 2000-01	ha	% of total ag. holdings in region	No.	Area
Seedlings planted for nature conservation	9	20%	124	0%	3%	10%
Seedlings planted for timber and wood pulp	11	25%	17	0%	2%	3%
Seedlings planted for enhanced production	13	28%	135	0%	9%	8%
Seedlings planted for protection of land and water	11	25%	130	0%	8%	20%
Seedlings planted for all other purposes	1	2%	2	0%	1%	1%

Source: ABS data, Agricultural Census, 2000-01 (as reported in QRBIS).

Conclusion

The Queensland Murray Darling NRM region represents 5.9% of the total area of Queensland and 1.4% of Queensland's total population. The population of the Queensland Murray Darling NRM region increased at a rate of 0.6% per year between 1996 and 2004. In general there was a decrease in the younger age groups and an increase in the older age groups between 1996 and 2001 in the Queensland Murray Darling NRM region; this indicates an ageing population in the Queensland Murray Darling NRM region.

The largest employer in the Queensland Murray Darling NRM region in 2001 was the Agriculture, Forestry and Fishing industry which employed 29.9% of the region's labour force. In contrast only 5.8% of the Queensland labour force is employed in the Agriculture, Forestry and Fishing industry. The largest sector in the Agriculture, Forestry and Fishing industry both for production and employment in 2000-01 was the beef cattle farming sector. Cotton produced the largest value of production for all crops in the Queensland Murray Darling NRM region in 2000-01.

The area of land irrigated within the Queensland Murray Darling NRM region in 2000-01 represented a significant percentage of all land irrigated across Queensland (16%). This may reflect the importance of cotton and cereals for grain in the region in 2000-01. The use of gypsum to correct physical soil problems also accounted for a large percentage of all gypsum (29%) used in Queensland.

Regional Agricultural Profile – Queensland Murray Darling NRM Region

The majority of fencing constructed in the Queensland Murray Darling NRM region for a stated purpose in 2000-01 was for the purpose of protecting creeks and rivers (29%). Fencing constructed in the region during 2000-01 for the protection of remnant native vegetation accounted for 24% of all fencing constructed for this purpose in Queensland. Most seedlings planted in the Queensland Murray Darling NRM region in 2000-01 were planted to enhance production.

This report has provided a basic social and agricultural profile of the Queensland Murray Darling NRM region based on 2001 data. This information may aid planning and implementing of natural resource management in the region. More importantly it will also provide a baseline against which information from future censuses (due in 2006) can be compared. Advice from the Australian Bureau of Statistics suggests that data from future surveys (Agricultural Census 2005-06, Population and Housing Survey 2005-06, and Natural Resource Management Survey 2004-05) will be provided to match the boundaries of the natural resource management regions. It will not be necessary therefore to concord the new census data to regional NRM boundaries in order to compare it with the data in this report.

References

Australian Bureau of Statistics 2006, *4624.0: Natural Resource Management on Australian Farms 2004-05*, Commonwealth of Australia, Canberra.