

Measuring Community Wellbeing in 'Cotton Communities':

The Socio-Economic Impact of the Australian Cotton Industry on Selected Regional Communities
(Report II of the Study)

March 2009





This Report has been prepared for the Cotton Catchment Communities CRC by:

Dr Judith Stubbs JSA

Colleen Lux JSA

John Storer JSA

James Flinn JSA



The Old Post Office
231 Princes Hwy
Bulli NSW 2515

phone: 61 2 4283 7300

fax: 61 2 4283 7399

website: www.judithstubbs.com.au

174 Rusden St
Armidale NSW 2350

phone: 61 2 6771 3833

fax: 61 2 6771 3528

website: www.care.net.au



Table of Contents

Executive Summary	1
Overview	1
What We <i>Do</i> Know - Describing the Status of Selected Communities.....	3
Economic Data from the <i>Information Paper</i> (CARE 2009)	4
Other Key Differences Between Case Study Communities	6
What we <i>may</i> know – Preliminary Analysis of the Socio-Economic Impact of the Australian Cotton Industry on Regional Cotton Communities	9
What we would <i>like to</i> know – Recommendations for Further Study.....	12
Related Research That Builds on the Pilot Study	12
Social and Economic Impact Assessment of Changes Affecting the Cotton Industry and Irrigated Agricultural Communities	12
Tracking Studies.....	13
1. Overview of the Study.....	14
2. Aims of Study.....	15
3. Methodology.....	15
3.1. Study Framework	15
3.1.1. What is Community Wellbeing?	15
3.1.2. External Factors	16
3.1.3. Social, Economic & Environmental Fields	17
3.2. Indicator Selection.....	20
3.3. Stakeholder Interviews	21
3.4. Community Survey.....	22
3.5. Local Business Survey.....	23
3.6. Replication of the Study.....	23
4. Snapshots of the Cotton Communities.....	24
4.1. Moree Plains, NSW.....	25
4.2. Narrabri, NSW.....	27
4.3. Narromine, NSW	29
4.4. Warren, NSW.....	31
4.5. The Darling Downs Region, QLD.....	33
5. Economic Indicators	35
5.1. Economy Summary Measures.....	35
5.2. Gross Value of Agricultural Production.....	36
5.3. Impact of Cotton Growing.....	37
5.3.1. Direct Effect of Growing Cotton.....	37
5.3.2. Total Impact of Growing Cotton	38
5.3.3. Employment Impact from Growing Cotton	38
5.3.4. Household Income Impact of Growing Cotton	39
5.4. Diversity in the Economy	39
5.4.1. Index of Specialisation NSW	39
5.4.2. Index of Specialisation QLD	40
5.5. Labour Force Participation.....	40
5.5.1. General Labour Force Participation.....	41
5.5.2. Female Labour Force Participation	42
5.5.3. Indigenous Labour Force Participation	42
5.5.4. Youth Labour Force Participation.....	43
5.5.5. Labour Force Participation 65+yrs.....	43
5.6. Shift-Share Analysis.....	44
5.7. General Unemployment.....	45
5.7.1. Female Unemployment.....	46
5.7.2. Indigenous Unemployment.....	46





5.7.3.	Youth Unemployment	47
5.8.	Jobless Families.....	47
5.9.	Job Containment	48
5.10.	Median Household Income	49
5.11.	Composition of Household Income	50
5.12.	Traineeships & Apprenticeships NSW.....	52
5.12.1.	Traineeships & Apprenticeships: NSW By Sex	53
5.12.2.	Traineeships & Apprenticeships: NSW By Indigenous Status	53
5.13.	Traineeships & Apprenticeships QLD	54
5.13.1.	Traineeships & Apprenticeships QLD: By Sex	54
5.13.2.	Traineeships & Apprenticeships QLD: By Indigenous Status	55
6.	Environmental Indicators.....	56
6.1.	Built Environment	56
6.1.1.	Tenure: % Owned & Being Purchased.....	59
6.1.2.	Tenure: % Being Purchased by Indigenous Status	59
6.1.3.	Tenure: % Social Housing.....	60
6.1.4.	Composition: % of Total Dwellings that are Vacant	60
6.1.5.	Cost: Median Weekly Rent.....	61
6.1.6.	Cost: Median Monthly Mortgage Loan Repayments.....	62
6.1.7.	Cost: Weekly Rent & Loan Repayments Compared.....	62
6.2.	Housing Affordability.....	63
7.	Social Indicators	65
7.1.	Median Age	65
7.2.	Indigenous Population	65
7.3.	Total Population Change	66
7.3.1.	Millmerran Population Differences 2001 - 2006.....	67
7.3.2.	Total Population Change: 2001 - 2006.....	67
7.4.	Population Change By Age.....	68
7.4.1.	Children 0-14 years old	68
7.4.2.	Youth, 15 - 24 years old.....	69
7.4.3.	Adults, 25-54 years old.....	70
7.4.4.	Seniors, 55+ years old	70
7.5.	Population Change By Indigenous Status	71
7.6.	Distribution of Males & Females.....	71
7.7.	Family Types	72
7.7.1.	Families with Children	73
7.7.2.	Lone Person Households	73
7.8.	Proportion of Separated & Divorced.....	74
7.9.	Net Population Projections	74
7.9.1.	Net Population Projections by Age	75
7.10.	Total Net Migration	76
7.10.1.	Net Migration by Age.....	76
7.10.2.	Net Migration by Household Type.....	77
7.10.3.	Net Migration by Weekly Income Level.....	77
7.11.	SEIFA Scores.....	78
7.11.1.	Index of Relative Socio-Economic Disadvantage.....	79
7.11.2.	Index of Relative Socio-Economic Advantage/ Disadvantage	79
7.11.3.	Index of Economic Resources	80
7.11.4.	Index of Education and Occupation.....	80
7.12.	Welfare Recipients.....	81
7.13.	Gaming Machines.....	82
7.14.	Skills Base	82
7.15.	Total number of students attending school.....	83
7.15.1.	Infants/Primary School Enrolments.....	84
7.15.2.	Infants/Primary School Enrolments by Indigenous Status	85
7.15.3.	Secondary School Enrolments.....	86



7.15.4.	Secondary School Enrolments by Indigenous Status	87
7.16.	Participation in Higher & Adult Education	88
7.17.	Access to Information: Broadband Internet	88
7.18.	Access to Information: Library Circulation	89
7.19.	Access to Specific Health Services: Antenatal Care	89
7.20.	GP Services per 1,000 Population	90
7.21.	Health Risk Factors	91
7.21.1.	Health Risk Factors Comparison	91
7.21.2.	Very High Psychological Distress	92
7.21.3.	Smokers	93
7.21.4.	Physical Inactivity	93
7.21.5.	High Health Risk Due to Alcohol Consumed	94
7.22.	Premature Mortality	94
7.22.1.	Total Premature Mortality Rate	96
7.22.2.	Circulatory System Disease	97
7.22.3.	Cancer (All Types)	97
7.22.4.	Cancer of the Trachea, Bronchus and Lung	98
7.22.5.	Respiratory System Diseases	98
7.22.6.	Injuries and Poisonings	99
7.22.7.	Suicide	99
7.22.8.	Motor Vehicle Accidents	100
7.23.	Chronic Diseases	101
7.23.1.	Chronic Disease Rate Comparison	101
7.23.2.	Estimates of Chronic Disease Index	102
7.23.3.	Asthma	103
7.23.4.	Type 2 Diabetes	103
7.23.5.	Mental and Behavioural Disorders	104
7.23.6.	Musculoskeletal Diseases	104
7.24.	Aged Care Packages	105
7.25.	Property Related Crime	105
7.25.1.	Car Theft	106
7.25.2.	Theft from Retail Store	107
7.25.3.	Steal from Dwelling	108
7.25.4.	Malicious Damage to Property	109
7.26.	Personal Crime	109
7.26.1.	Assault NSW	110
7.26.2.	Assault QLD	111
7.26.3.	Sexual Assault	112
7.26.4.	Drug Related Offences	113
7.27.	Volunteerism	114
8.	Community Survey Results	115
8.1.	Methodology	115
8.1.1.	Overview	115
8.1.2.	Limitations	115
8.2.	Basic Demographic Profile of Respondents	115
8.2.1.	Gender	116
8.2.2.	Age	116
8.2.3.	Indigenous Status	117
8.3.	Survey Findings	117
8.3.1.	Time Lived in the Community	117
8.3.2.	Work Related to the Cotton Industry	117
8.3.3.	Quality of Life	118
8.3.4.	Social Cohesion & Social Capital	120
8.3.5.	Impact of the Cotton Industry on the Community	123
9.	Business Survey Results	125
9.1.	Response Rate	125
9.2.	Employees	126





9.2.1.	Full-time employees.....	126
9.2.2.	Part-time employees	127
9.2.3.	Retaining Skilled Employees	128
9.2.4.	Employment Vacancies	129
9.3.	Future Intentions.....	131
9.4.	Industry Competition	132
9.5.	Issues Affecting Business.....	132
9.6.	What else do we need to know about Local Business Vitality?	133
10.	Relationship between Cotton and Community Wellbeing.....	135
10.1.	% Population Change (2001 – 2006)	136
10.2.	% Population 2006 – Indigenous	137
10.3.	Median Age	137
10.4.	SEIFA Index: Disadvantage	138
10.5.	Skills Base - % of the population 15+ with trade or better qualifications	138
10.6.	Labour Force Participation General (15+)	139
10.7.	Labour Force Participation (65+).....	139
10.8.	Youth Unemployment.....	140
10.9.	Total Premature Mortality.....	140
10.10.	Chronic Disease Index	141
10.11.	Crime Rate: Steal from Dwelling	141
10.12.	Crime Rate: Total Personal Crime.....	142
10.13.	Voluntary work for an organisation or group.....	142
11.	Relationship Between Indicators	144
11.1.	Median Household Income by Very Positive + Positive	146
11.2.	Median Household Income by % Population Change 2001-2006.....	147
11.3.	Median Household Income by % Indigenous Population	147
11.4.	Median Household Income by Median Age	148
11.5.	Median Household Income by Skills Base	148
11.6.	Median Household Income by Youth Unemployment	149
11.7.	Median Household Income by Steal from Dwelling.....	149
11.8.	Median Household Income by Voluntary Work for an Organisation or Group	150
11.9.	Very Positive + Positive by % Population Indigenous 2006	150
11.10.	Very Positive + Positive by SEIFA Index: Disadvantage	151
11.11.	Very Positive + Positive by Total Personal Crime	151
11.12.	Very Positive + Positive by Voluntary Work for an Organisation or Group	152
11.13.	% Population Indigenous 2006 by SEIFA Index: Disadvantage	153
11.14.	% Population Indigenous 2006 by Youth Unemployment.....	153
11.15.	% Population Indigenous 2006 by Premature Mortality Total Rate 2007	154
11.16.	% Population Indigenous 2006 by Steal from Dwelling.....	154
11.17.	% Population Indigenous 2006 by Total Personal Crime	155
12.	Relationship between Economic & Social Indicators.....	156
12.1.	% of GRP (cotton) by SEIFA (disadvantage)	158
12.2.	% of GRP (agriculture) by SEIFA (disadvantage)	159
12.3.	Index of Specialisation by Labour Force Participation: 65+ yrs	159
12.4.	Index of Specialisation by Voluntary Work for an Organisation	160
Appendix A1: Cotton Consultation Letter.....		161
Appendix A2: Cotton Consultation Tick Shee		162
Appendix B: Cotton Real Estate Survey		165
Appendix C: Cotton Community Survey.....		168
Appendix D1: Cotton Business Survey Letter.....		170



List of Figures

Figure 3.1: Framework of Community Wellbeing & External Factors.....	19
Figure 5.1: Direct Effect of Cotton Growing on Economies.....	37
Figure 5.2: Total Impact of Cotton Growing on Economies.....	38
Figure 5.3: Employment Impact of Cotton Growing.....	38
Figure 5.4: Household Income Impact of Cotton Growing.....	39
Figure 5.5: Index of Specialisation NSW 1981-2006.....	40
Figure 5.6: Index of Specialisation QLD 1991-2006.....	40
Figure 5.7: Labour force participation rate for 15 + year olds.....	42
Figure 5.8: Labour Force Participation rate for Females aged 20 – 54.....	42
Figure 5.9: Labour force participation rate by Indigenous Status (Total 15yr+).....	43
Figure 5.10: Labour force participation rate for 15 – 24 year olds.....	43
Figure 5.11: Labour force participation rate for 65+ year olds.....	44
Figure 5.12: Cumulative Shift-Share Analysis, NSW 1981-2006.....	45
Figure 5.13: General Unemployment Rate for 15 – 64 year olds.....	45
Figure 5.14: Female Unemployment Rate (15 +).....	46
Figure 5.15: Unemployment Rate by Indigenous Status.....	47
Figure 5.16: Youth unemployment rate (15-24 year olds).....	47
Figure 5.17: Proportion of Families with Children under 15 yrs old who are Jobless.....	48
Figure 5.18: Net Commuting to Work.....	49
Figure 5.19 Median Household Income.....	49
Figure 5.20: Composition of Household Income, NSW.....	51
Figure 5.21: Composition of Household Income, QLD.....	52
Figure 5.22: Average Weekly Household Disposable Income (\$).....	52
Figure 5.23: Rate of Total Trainee/Apprenticeships per 1,000 Adult Population (15+) NSW.....	53
Figure 5.24: NSW Traineeships & Apprenticeships, % by Sex.....	53
Figure 5.25: NSW Traineeships & Apprenticeships, Rate per 1,000 Adult Indigenous Population (15+).....	54
Figure 5.26: QLD Traineeships & Apprenticeships, Rate of New Commencements in 2006.....	54
Figure 5.27: QLD Traineeships & Apprenticeships, % of New Commencements by Sex (2006).....	55
Figure 5.28: QLD Traineeships & Apprenticeships, Rate of New Commencements.....	55
Figure 6.1: % Owned and Being Purchased of Total Occupied Private Dwellings.....	59
Figure 6.2: % Being Purchased by Indigenous Status.....	60
Figure 6.3: % of Social Housing.....	60
Figure 6.4: % of Total Dwellings that are Vacant.....	61
Figure 6.5: Median Weekly Rental Cost.....	61
Figure 6.6: Median Monthly Mortgage Loan Repayment.....	62
Figure 6.7: Median Weekly Rent & Loan Repayments Compared.....	62
Figure 7.1: Median Age.....	65
Figure 7.2: Millmerran Population Differences 2001 to 2006.....	67
Figure 7.3: % Change in Total Population from 2001 to 2006.....	68
Figure 7.4: % Population Change by Age Group from 2001 to 2006.....	68
Figure 7.5: % of Population Change Aged 0-14 from 2001 to 2006.....	69
Figure 7.6: % of Population Change Aged 15-24, 2001-2006.....	69
Figure 7.7: % Change in Population Aged 25-54, 2001-2006.....	70
Figure 7.8: % Change in Population Aged 55+, 2001-2006.....	71
Figure 7.9: % Change in Population by Indigenous Status, 2001- 2006.....	71
Figure 7.10: # of Males per 100 Females.....	72
Figure 7.11: Proportion of Different Family Types.....	73
Figure 7.12: Proportion of Families with Children.....	73
Figure 7.13: Proportion of Households that are Lone Person Households.....	74
Figure 7.14: Proportion of Individuals who have Married that are Separated or Divorced.....	74
Figure 7.15: SEIFA Index of Relative Socio-Economic Disadvantage (2001).....	79
Figure 7.16: SEIFA Index of Relative Socio-Economic Advantage / Disadvantage (2001).....	80
Figure 7.17: SEIFA Index of Economic Resources (2001).....	80
Figure 7.18: SEIFA Index of Education and Occupation (2001).....	81





Figure 7.19: Proportion of Welfare Types	82
Figure 7.20: Per Capita Expenditure on Gaming Machines	82
Figure 7.21: Skills Base of Population (15 yrs+)	83
Figure 7.22: % Change in Primary School Enrolments (2001 – 2006)	85
Figure 7.23: % Change in Primary School Enrolments for Indigenous Students (2001 – 2006)	86
Figure 7.24: % Change in Secondary School Enrolments (2001 – 2006)	86
Figure 7.25: % Change in Secondary School Enrolments for Indigenous Students (2001 – 2006)	87
Figure 7.26: Participation in Higher and Adult Education	88
Figure 7.27: Broadband Utilisation by Households	88
Figure 7.28: Library Circulation Rates per 100 adults	89
Figure 7.29: % of Pregnant Women who Attend Antenatal Visits	90
Figure 7.30: GP Services per 1,000 population	90
Figure 7.31: Comparison of Health Risk Factor Rates	92
Figure 7.32: Rate of Very High Level of Psychological Distress (18+ yrs)	93
Figure 7.33: Rate of Smokers (18+ yrs) per 1,000 population	93
Figure 7.34: Rate of Physical Inactivity per 1,000 population	94
Figure 7.35: Rate of High Health Risk due to Alcohol Consumed per 1,000 population	94
Figure 7.36: Causes of Premature Mortality Compared	96
Figure 7.37: Total Premature Mortality Rate per 100,000 population	96
Figure 7.38: Premature Mortality – Circulatory System Disease	97
Figure 7.39: Premature Mortality – Cancer (all types)	98
Figure 7.40: Premature Mortality – Cancer (trachea, bronchus, lung)	98
Figure 7.41: Premature Mortality – Respiratory Disease	99
Figure 7.42: Premature Mortality – Injuries and Poisonings	99
Figure 7.43: Premature Deaths - Suicide	100
Figure 7.44: Premature Deaths – Motor Vehicle Accidents	100
Figure 7.45: Chronic Disease Rate Comparison	102
Figure 7.46: Chronic Disease Index	102
Figure 7.47: Rate of Asthma per 1,000 population	103
Figure 7.48: Rate of Type 2 Diabetes per 1,000 population	103
Figure 7.49: Rate of Mental and Behavioural Disorders per 1,000 population	104
Figure 7.50: Rate of Chronic Musculoskeletal Diseases per 1,000 population	104
Figure 7.51: Rate of car theft per 100,000 population – NSW	107
Figure 8.1: Gender of Community Survey Respondents	116
Figure 8.2: Age of Community Survey Respondents	116
Figure 8.3: Time Lived in the Community	117
Figure 8.4: Is Your Work Related to the Cotton Industry?	118
Figure 8.5: Satisfaction with Life in Community at the Moment	119
Figure 8.6: In the Past Year How Has Life Changed in Your Area?	119
Figure 8.7: In the Past 5 Years, How Has Life Changed in Your Area?	120
Figure 8.8: Impact of Cotton Industry on the Community – More Positive or More Negative?	124
Figure 9.1: Percentage of surveys returned by town	125
Figure 9.2: Percentage of surveys returned by industry	126
Figure 10.1: Results for Sub-set of Indicators including Non-Cotton Communities	136
Figure 10.2: % Population Change 2001 – 2006, Non-Cotton Comparison	137
Figure 10.3: % of Population that is Indigenous, Non-Cotton Comparison	137
Figure 10.4: Median Age, Non-Cotton Comparison	138
Figure 10.5: SEIFA Index of Disadvantage, Non-Cotton Comparison	138
Figure 10.6: % of Population 15+ with Trade or Better Qualifications, Non-Cotton Comparison	139
Figure 10.7: Labour Force Participation 15+, Non-Cotton Comparison	139
Figure 10.8: Labour Force Participation 65+, Non-Cotton Comparison	140
Figure 10.9: Youth Unemployment (15-24), Non-Cotton Comparison	140
Figure 10.10: Total Premature Mortality NSW, Non-Cotton Comparison	141
Figure 10.11: Chronic Disease Index, Non-Cotton Comparison	141
Figure 10.12: Rate of Steal from Dwelling NSW, Non-Cotton Comparison	142
Figure 10.13: Total Personal Crime Rate, Non-Cotton Comparison	142
Figure 10.14: % of Population Engaged in Voluntary Work	143
Figure 11.1: Median Household Income by Very Positive + Positive	146



List of Tables

Table 4.1: Moree Plains LGA Snapshot.....	25
Table 4.2: Narrabri LGA Snapshot.....	27
Table 4.3: Narrromine LGA Snapshot.....	29
Table 4.4: Warren LGA Snapshot.....	31
Table 4.5: Darling Downs Regional Centres Snapshot.....	34
Table 5.1: Economy Summary Measures.....	36
Table 5.2: Gross Value of Agricultural Production.....	36
Table 5.3: Labour force participation rate by age, sex and Indigenous status.....	41
Table 5.4: Composition of Household Income, NSW.....	50
Table 5.5: Composition of Household Income, QLD.....	51
Table 6.1: Low Income Households in Housing Stress.....	63
Table 6.2: Moderate Income Households in Housing Stress.....	64
Table 7.1: Population Change.....	66
Table 7.2: Net Population Projections 2006 – 2026.....	75
Table 7.3: % Projected Population Change 2006-2026 by Age Group.....	75
Table 7.4: Comparative SEIFA Scores.....	78
Table 7.5: Actual Welfare Recipients.....	81
Table 7.6: Total infants/primary school enrolments, 2001 & 2006.....	83
Table 7.7 Summary of Health Risk Factors.....	91
Table 7.8: Summary of Selected Causes of Premature Mortality (before age 75), Rate per 100,000 population.....	95
Table 7.9: Summary of Selected Chronic Health Issues – Rates per 1,000 population.....	101
Table 7.10: Rate of Aged Care Packages per 1,000 population.....	105
Table 7.11: Summary of selected property crime rates (per 100,000).....	106
Table 7.12: Summary of selected property crime rates per 100,000 population.....	110
Table 8.1: What Do You Like Most About Living in Your Area?.....	118
Table 8.2: Neighbourliness.....	121
Table 8.3: Community Engagement.....	122
Table 8.4: Community Safety.....	123
Table 8.5: Positive Impacts of the Cotton Industry on the Community.....	123
Table 8.6: Negative Impacts of the Cotton Industry on the Community.....	124
Table 9.1: Responses on reasons for current vacancies.....	130
Table 9.2: Summary of Responses by Town – What else do we need to know about local business vitality?.....	133
Table 11.1: Indictors to Investigate Correlations.....	144
Table 11.2: Summary of Relationships Between Indicators.....	144
Table 11.3: Summary of Relationship between % of Indigenous Population and Indicators.....	152





Executive Summary

Overview

Measuring Community Wellbeing in Cotton Communities is the second report from a study commissioned in late 2007 by the Cotton Catchments Communities CRC – *Documenting the Socio-Economic Impact of the Australian Cotton Industry on Regional Communities in NSW and Qld.* The *Measuring Community Wellbeing* report (this report) brings together the findings of research by the Centre for Agricultural and Regional Economics (CARE) on a range of economic indicators of the relative contribution of cotton to selected regional economies, with JSA's research on regional performance on a range of other socio-economic indicators. Together, these two pieces of research aim to better understand the contribution of cotton to the social and economic wellbeing of regional communities, and conversely, to understanding what the impact on community wellbeing may be if the relative contribution of cotton were to increase or reduce. The areas of Narrabri, Narromine, Moree, Warren and a defined region of the Darling Downs (Millmerran, Dalby/Wambo and Cecil Plains) were the focus of the study.

The *Study* develops a framework and set of social, economic and environmental indicators that aid in understanding how some 'cotton communities' are performing against relevant state and national benchmarks. The first part of the study, reported in the *Information Paper* (CARE 2009), provides more straightforward measures of the contribution of cotton to regional economies. It reports on the contribution of cotton to GRP, the relative specialisation (economic diversity) of each region compared with state benchmarks, and the employment share arising from cotton production and associated activities.

The *Measuring Community Wellbeing* report (this report) provides data on a wider range of socio-economic indicators of community wellbeing including economic performance, health, crime, employment, changes in population and age profile and other socio-economic data for the selected 'cotton communities', and benchmarks these indicators against the national and state figures. This provides a valuable 'snap shot' of the relative wellbeing of cotton communities against these socio-economic indicators at the present time. Importantly, it provides a basis from which future changes in the contribution of cotton, or indeed other changes in the internal or external 'environment' of these communities, may be measured in the future.

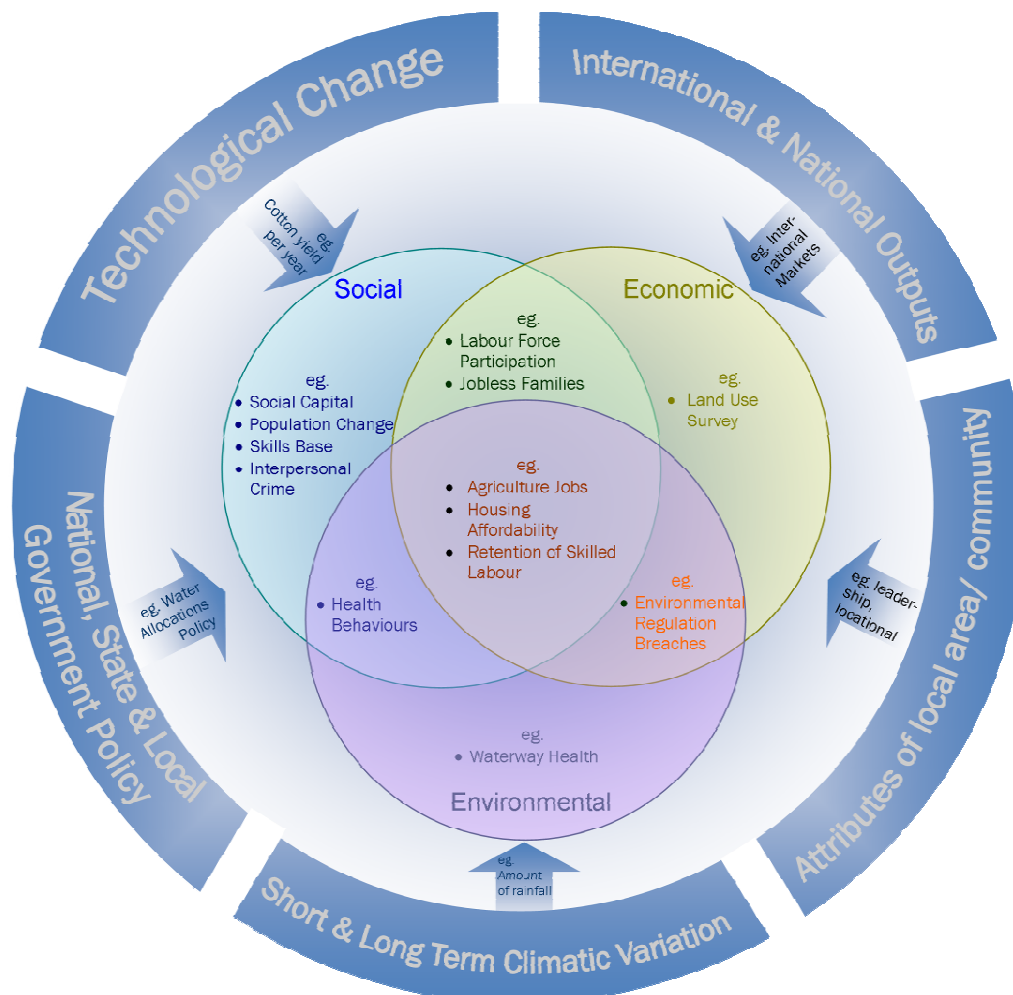
The current report also conducts a preliminary analysis of the impact of the cotton industry as it currently stands on the socio-economic status or wellbeing of the selected communities. It does this through testing the relationship of cotton and other economic variables in CARE's *Information Paper* against the socio-economic indicators of wellbeing analysed in this report in order to examine what if any impact the cotton industry has on these indicators. In doing so, we posed questions such as - are cotton communities more or less like to have positive social outcomes such as retention of workforce, unemployment, health or crime outcomes compared to communities where cotton is not a predominant part of the economy? Are cotton communities more resilient - able to successfully adapt to changes in the social, economic or physical environment - than other communities, as measured by age of the workforce, rate of decline in or age of the population, rate of apprenticeships, or degree of economic diversity?





These are complex issues, and the relative role of cotton *per se* can be difficult to isolate in the context of far more profound forces affecting regional, rural and remote areas. These forces include things like ongoing rural restructuring in the face of technological change, short and long-term climatic variation, long-term population decline of many rural towns and remoteness from opportunities offered by major centres. Changes in government policy have also had significant impacts upon community wellbeing overtime, for example, decision about close of community services and facilities. More recent policy changes related to water availability and usage patterns (discussed below) are likely to have profound impacts in the future, not only on cotton production and thus on regional economies, but more directly on regional communities in a range of ways that are yet to be understood.

The following diagram shows the range of factors impacting on ‘cotton’ and indeed all agricultural communities, of which the relative contribution of cotton to the regional economy is but **one** factor.



The socio-economic indicators reported in this *Measuring Wellbeing* report and the accompanying *Information Report* provide valuable descriptive information on the current status of cotton communities, and a benchmark against which future changes in these indicators can be measured. They are relatively straightforward to compile. However, understanding the impact of future changes in cotton production



on these indicators of community wellbeing is not as simple. The range of factors impacting on agricultural communities noted in the diagram above clearly makes separating the impact of ‘cotton’ *per se* difficult.

Drawing firm conclusion in the present study is also limited by the restricted scope or ‘case study’ nature of the study and limited collection of some key data reported in the *Information Paper*. Whilst we can *describe* the relative wellbeing of these communities in a context of the contribution of cotton, understanding possible *causal* relationships between changes in cotton production and indicators of community wellbeing over time is limited, first by the size of the data set (five case study communities and only two non-cotton communities), and secondly the lack of measures indicating the degree to which cotton uses resources that could be devoted to other forms of agricultural production, for example, land under cultivation. The use of employment data as a proxy for output also restricts the ability to make inter-regional comparisons, as it does not allow for differences in the use of other agricultural resources such as land or water. Other measures such as tonnage produced may have provided useful information in this regard. As such, the findings of this study are incomplete, and cannot be generalised to the ‘impact of the Australian cotton industry on regional communities in NSW and Qld’.

The current study should therefore be regarded as a pilot study, which provides valuable information in and of itself for case study communities, and also points the way to further study to better understand the wider impacts on irrigated agricultural (including cotton) communities from changes to the irrigated agricultural industry in the future.

The remainder of this summary is therefore divided into 3 sections:

- What we *do* know – description of case study cotton communities against relevant benchmarks, which are explored more fully in the *Information Paper* (CARE 2009) and the body of this *Measuring Wellbeing Report*;
- What we *may* know – a preliminary analysis of possible causal relationships between the cotton industry and the social wellbeing of communities as described by the selected socio-economic indicators in this report;
- What we would *like to* know – recommendations future research that builds on this pilot study and helps us to understand how community wellbeing is likely to be impacted by changes affecting the cotton industry, including climatic, policy, technological and other issues facing the industry at the present time.

What We Do Know - Describing the Status of Selected Communities

The timeframe of the study, October 2007 to March 2008, proved to be an interesting time due to the protracted drought that has affected both irrigators and dry-land farmers across much of the study area. According to the Darling Downs Cotton Extension Officer, this year has been one of the lowest cotton producing years with only 12,000 hectares planted in the region.¹ Coupled with this drought, the energy

¹ Interview with Darling Downs Cotton Extension Officer, 04 February 2008, Dalby.





and mining boom in recent years dramatically affected many areas of the country, including some of the study regions. These two events have affected communities in very pronounced ways - economically, socially and environmentally.

The subsequent downturn in mining and other development during the ‘global financial crisis’ and the roll out of policies related to the Federal Government’s *Water for the Future* including modernisation to increase water efficiency and buyback of water licences to increase environmental flows since mid-2008, will likewise affect the socio-economic indicators analysed for this study. Quite different outcomes could be expected for some of the regions were the study being conducted at the time of writing. As such, the economic, climatic, technological and policy context in which the wellbeing of cotton communities is being examined is vital, and the value of conducting regular follow-up studies should not be underestimated. Contextual and temporal factors will each play a significant role in understanding the relationship between the irrigated agricultural (including cotton) industry and related communities over time.

The study reveals some clear differences, as well as some similarities, in wellbeing between the case study cotton communities that are the result of many factors. Primary factors appear to be related to the proximity to capital cities and large regional centres, the impact of the drought and energy/mining boom, diversity of the local economy and other more subtle factors related to community resilience. Key findings are summarised below.

Economic Data from the *Information Paper* (CARE 2009)

Relative Contribution Cotton to Case Study Regions

CARE (2009) has provided the following summary measures. More detailed analysis and comparison between regions is also provided in Section 5 below, including additional economic indicators compiled for this *Measuring Wellbeing* report.

Table ES1: Summary of Economic Measures

Measure	Narrabri	Moree	Narromine	Warren	Darling Downs
GRP 2005-06 (\$ million)	520	605	205	110	1,278
Employed all Industries (2006)	5,350	5,691	2,159	1,105	14,450
Economic Diversity Index	30.1	28.8	33.0	48.2	25.3
Cotton Growing Share of GRP	19%	29%	11%	22%	6%
Cotton Research Share of GRP	1.7%	0.3%	-	-	0.04%
Agricultural Share of GRP	28.4%	43.7%	34.8%	44.2%	17.6%

(Source: CARE 2009)

Some of the features of the case study regions noted by CARE include:

- The regions varied in size by a factor of about 12.



- The smallest regional economies were also the most remote, while the largest economy was the least remote.
- The diversity index is lowest (i.e. most diverse economy) for the larger and least remote economies. However, even at 25 for selected areas within the Darling Downs, this indicates a relatively specialised economy.
- The share of cotton in the economy is largest in Moree and Warren as specialist agricultural economies, but is smaller for the more diversified economies (Narromine and Darling Downs). Narromine gains its status by way of its access to nearby Dubbo.
- The economic impact of cotton research is of negligible importance except for Narrabri.

It is also interesting to note that:

- There are varying trade balances amongst the study areas, with Narrabri, Narromine and the Darling Downs regions estimated to have imports exceeding exports, while Moree and Warren (though slightly) show exports exceeding imports.
- There is considerable variation in agricultural production between regions, between commodities as well as in total output. This reflects variations in natural conditions, with producers moving between commodities in response.
- Flow-on effects are concentrated mainly in the production category and are a reflection of the large amount of services that are purchased by growers from other specialists. The total impact of cotton varies between the towns, such that it plays a much more significant role in Narrabri, Moree Plains and Warren compared to Narromine and the Darling Downs.
- Also, higher employment generated as the result of total impact in Narrabri, Moree Plains and Darling Downs, a result of the many and varied flow-on industries and specialisations present for the cotton industry in these areas.

(See Section 5 below for more detail).

CARE (2009) notes that the development opportunities for the case study regions vary considerably. Only the Darling Downs region has a record of steady growth (and even then it is mainly in the Dalby urban area). For the remaining regions, economic development to build industry and market diversity is considered to be a high priority. In the case of Narrabri and the Darling Downs, there is the potential for some large energy developments with various projects already under way with more planned. The impacts of the global economic downturn may adversely affect such growth opportunities, at least in the short-term. CARE note that these developments are likely to boost growth, although the capital-intensive nature of these developments will limit the impact on the local economy. As such, some gains in diversity may be expected, but the primary industry base for those economies will remain with the associated implications.

CARE notes that the economies of case study areas will make significant gains in diversity if they can build a larger share of their economies around knowledge and technology based industries, especially those that can service markets beyond the local region. It notes that small businesses (less than 20 employees) appears to create most jobs, so that growing existing local enterprises (related to cotton or other economic activities) will be important to employment and economic growth.





Other Key Differences Between Case Study Communities

Proximity to Larger Centres

There are striking differences across many of the other socio-economic indicators between the NSW and QLD communities studied. We attribute some of these differences to the proximity of these areas to larger regional centres. The Darling Downs towns (Dalby, Millmerran and Cecil Plains) are all within relative striking distance of Toowoomba, such that many in Dalby choose to commute, and are within approximately 200 km of Brisbane and the Gold Coast. Within the NSW communities, the clearest example of the influence of proximity can be seen between Narromine and Warren. Whilst both are relatively small communities, the proximity of Narromine to Dubbo has a noticeably positive impact on the indicators of wellbeing of the area including its capacity to diversify its economic base and access the employment and services of a larger centre.

Drought Coupled with Energy/Mining Boom

At the time the study was conducted, the social and economic wellbeing of many of these communities has been affected by the recent drought and its impacts on the agricultural sector, as well as by the energy/mining boom across Australia and in regions closer to the study areas. Impacts have included: a loss of agriculture related jobs, people moving away to seek employment in the energy and mining sector, people engaging with fly-in/fly-out work schedules in order to remain in their community, or other benefits of the boom directly experienced within some communities. However, there have been tremendous difficulties experienced by those who have lost work due to the drought, especially unskilled workers. Recent technological advancements in cotton production have also reduced the need for chippers and itinerant workers.

Many local businesses indicated that the drought was having a significant impact on their livelihoods, whilst most also noted concerns with skills shortages in part due to the attraction of local people to work in ‘resources boom’ areas (see results of the Business Survey at **Section 9** below). For those who have chosen to seek new opportunities in the energy/mining sector, there are impacts on family relationships and the community. For example, some workers in Narromine have left for the mines in NSW or WA, while the family has stayed on in town. It appears that many such arrangements last about 12 to 18 months, then either the family moves away or there is a separation.² Some in Moree worry that when the drought breaks and the jobs return, many of the skilled workers who have left the area for other opportunities will not return to the community. However, the opposite seems to be the case in Narrabri and Dalby where energy/mining activities have brought more opportunities to the area and are generally thought to be a positive influence on the community.

As noted above, more recent global macro-economic changes since the study was conducted are having serious impacts on regions reliant on primary extractive industries. It could be that there would be less difference between case study regions reliant on primarily on agriculture and those with strong extractive industry bases since the economic down turn, though the extent of the change would need further study.

² Narromine consultation workshop, 30 January 2007, USMC Narromine.



Economic Diversity

Economic diversity appears to be a key indicator of community wellbeing and robustness. Dalby is an example of an area that has had an agricultural (primarily cotton) base to its economy that is changing and diversifying. The area is also home to many feedlots, grain cleaning and processing operations, coal seam gas plants, coalmines, machinery manufacturers, and an ethanol plant in the near future. It is acknowledged that cotton has had a lot to do with establishing the now-diverse economy, such that many of the machinery and electrical companies would not exist if it were not for the base the cotton industry provided. However, there is a sense that when cotton was booming it was benefiting a very small part of the community, while the ‘new economy’ (the more diversified economy) is benefiting the community more widely.³ Further evidence of this is the change of the annual ‘Australian Cotton Week’ held in Dalby, which this year will be known as the ‘Cotton On To Energy’ festival.⁴ This is a small but significant indicator of the shifts taking place in the local economy and community focus. Again, more recent economic trends would probably show quite different trends in community wellbeing were the data being collected at the time of writing.

Narrabri has also diversified its economy in many ways. While still having a strong agricultural base, the increase in specialised cotton related research and upsurge of mining in the area has had an impact on the diversity of the local economy and its ability to attract a range of groups to the area. Despite these changes, Narrabri has still experienced a net out-migration of people and a decrease in overall population between 2001 and 2006. Warren appears to be the community that is most reliant on the cotton industry of the areas included in this study, and with the least diverse economy. A number of factors, including its more remote location and lower level of economic diversification, contribute to this reliance and the sense that the LGA seems to feel the impact of external influences (such as the drought) more strongly than the other communities. We see this most strongly in the results from the community survey in Warren, where when asked ‘how life has changed in the last 1 year, and last 5 years’ - 95% of those surveyed in Warren felt that ‘things have got worse’.

Community Resilience

What makes a community strong and able to positively adapt in the face of change? While a strong economy is an essential component of a strong community, there are other attributes that contribute to community strength and resilience – many of which are related to the health and wellbeing of individuals, relationships, and service structures. This study has aimed to identify some of these attributes that influence the capacity of a community to be a place where people can live, want to live and chose to live in compared to other areas. These attributes are benchmarked here and can be tracked over time through the indicators and tools like the community and local business surveys employed in this study.

Overall, there appears to be a difference in the health and wellbeing of the communities across the state line, such that the NSW areas appear to be experiencing a reduced level of wellbeing across many indicators compared to the QLD areas. Indicators where these differences are most apparent include: SEIFA measures that show less disadvantage in the QLD areas, higher unemployment rates in NSW,

³Interview with Dalby Town Council and Wambo Shire planning and community services staff, 05 February 2008, Dalby.

⁴ See www.cottonweek.com.au for more information.





higher labour force participation rates for youth and indigenous people in the QLD areas, higher rates of premature deaths from cancer in the NSW areas, and population projections which show gradual increases for the QLD areas and continued decline in the NSW communities. Moreover, when the study areas are compared with two randomly selected NSW non-cotton areas we see more similarities between the non-cotton NSW towns and the QLD cotton towns. For example, the non-cotton NSW areas are less disadvantaged, have lower crime rates and have lower rates of premature mortality compared to the NSW cotton towns. To what extent these differences are related to the cotton industry is very difficult to say, which is why continued tracking of the indicators is so important.

However, results from the community survey (reported in Section 8 below) show some interesting contrasts to the indicators. Residents from all of the study areas report a high level of satisfaction with life in their communities. If we rank the communities in terms of their responses to the survey questions regarding social cohesion/social capital from the highest to the lowest level, the following order is revealed: Narrabri, Warren, Millmerran, Narromine, Dalby and Moree Plains. This indicates that while economic diversity and proximity to larger centres is important, other factors contribute to feelings of neighbourliness, community engagement and community safety, as many of the more remote communities with smaller economies show higher levels of social cohesion and social capital compared to larger and more economically diverse areas. An example of this is that despite the high rate of respondents who felt that life in Warren has got worse, correspondingly 90% of Warren respondents felt either 'very positive' or 'positive' about life in their area at the moment.

These findings received an interesting response from the Warren consultation workshop. As one person exclaimed,

The fact that so many people in Warren said that things have got worse in the last 5 years says to me that they responded honestly! It makes me feel good that even though people said they think things have gotten worse, they are still positive about living here. I think that says a lot.⁵

It is this kind of positive attitude both expressed by the community through the survey, and by a local leader present at the workshop that demonstrates some of the resilience and robustness of the community to withstand challenges and, hopefully, to adapt positively to change.

⁵ Warren consultation workshop, Warren Sporting Complex.



What we may know – Preliminary Analysis of the Socio-Economic Impact of the Australian Cotton Industry on Regional Cotton Communities

Overview

This section summarises our preliminary findings on the relationship between the economic contribution of cotton to regional communities and key socio-economic indicators considered in the study (see **Section 12** below for detailed analysis). This is in order to form a preliminary view about the impact of cotton *per se* on community wellbeing. This is important if we are to understand what changes in community wellbeing we might expect to see if cotton increased or decreased in importance in the regional economy, for example, due to changes in government policy, climate change and the like.

In particular, it highlights those indicators of community wellbeing where there may be a statistically meaningful relationship. Indicators potentially affected by the cotton industry in a meaningful way included employment, age of workforce, level of disadvantage, proportion of Indigenous population, household income and relative population decline. It is also likely that other indicators of wellbeing may be related to cotton production, but again data points and appropriate production or land use measures were inadequate. Our preliminary findings are discussed below, and provide the basis for a more detailed (and statistically meaningful) study of the impact for the cotton industry, discussed later.

Methodological issues

While it is the central question in this study, determining the socio-economic impact of the Australian cotton industry on cotton communities has been confounded by a number of factors.

Firstly, there is an absence of measures in the study indicating the degree to which cotton uses resources that could be devoted to other forms of agricultural production, for example, land under cultivation. The use of employment data as a proxy for output (see CARE 2009) also restricts the ability to make inter-regional comparisons, as it does not allow for differences in the use of other agricultural resources such as land or water. Other measures such as tonnage produced may have provided useful information in this regard.

The limited sample size (only five cotton regions and two non-cotton regions are available for some indicators) means that any apparent trends are unlikely to be statistically significant and any multiple regression analysis is meaningless. Generalising impacts on cotton regions compared with other areas is also limited, as is ascribing causality. For example, an increasing % of GRP (cotton) is associated with greater disadvantage as discussed below, but that may simply be because cotton growing and lower SEIFA are found in the same area for other reasons (e.g. remoteness and more residual populations) rather than the decreasing SEIFA being an outcome of the use of resources for cotton production.

As a further complicating factor, cotton is **one** form of irrigation based agriculture and we would expect the “next best use” of resources such as land and water to be only marginally less efficient than cotton. Again the method of calculating contribution to GRP used for this study (see CARE 2009) does not allow such hypotheses to be tested. Finally, many of the NSW communities have significant Indigenous populations, with those populations associated with many indicators of social disadvantage. It may be the



increasing proportion of Indigenous people, for example, in some cotton communities that is contributing to the disadvantage of these communities (although our research indicates that poor outcomes such as high levels of premature death are apparently not correlated with the proportion of Indigenous people in the area - see **Section 11** for discussion). Larger data sets are required to disentangle this parameter from other parameters.

Preliminary Findings of Relationships

The key predictor of socio-economic impact on the case study regions would appear to be the Index of Specialisation (**degree of economic diversity**) rather than the relative contributions of different agricultural output including cotton to agricultural GRP. Communities with more specialised economies were found to have lower median household incomes, declining number of residents overall, increasing Indigenous populations, older age profiles, older work forces, higher youth unemployment and greater socio-economic disadvantage in our preliminary statistical analysis. While more specialised communities had a greater proportion of GRP from cotton, this is no more than to state the obvious (that is that in specialised communities a significant proportion of GRP comes from a particular source) as the degree of specialisation has little to do with the use of agricultural resources for cotton rather than for another use.

Some positive relationships between cotton production and the wellbeing or resilience of the local community were found in our preliminary analysis. Based on the limited data set generally provided by only 5 case study regions, and by comparison with agriculture generally, cotton would appear to have a positive socio-economic impact in that it is associated with lower rates of youth unemployment and a younger workforce indicated by lower rates of workforce participation in those over 65 years. Some evidence of a younger, more vibrant and potentially more educated workforce both in the industry and in economic activities associated with cotton (e.g. services, research, etc) may be evident, and would be of benefit to the local community. Again, a more extensive data set would be required in order to infer any statistically meaningful relationships including differences between cotton production and agriculture in general.

Interestingly, the cotton communities also seem to be associated with higher levels of “social capital” by some measures such as positive perceptions of the community and volunteering. Qualitative information from the Community Survey and Business Survey (reported in Sections 8 and 9 below) also support this preliminary finding, with a high level of commitment to the local community or growing the local economy evident.

A number of null relationships are also of interest. Median household income appeared to be independent of the percentage of GRP attributable to cotton production, as was median age and population change. However these variables were associated with index of specialisation (diversity of the local economy) in our preliminary testing.

On the less positive side, where trends related to ‘cotton’ *per se* were evident, they were as likely to be associated with agriculture in general.⁶ A high proportion of Indigenous people were highly associated with agriculture and less so with cotton specifically, however this is more likely to be reflective of geographical location and history of communities rather than agriculture or cotton. The presence of

⁶ Although again differences between cotton and other agriculture were evident but unlikely to be statistically significant, and would require the inclusion of more non-cotton communities



agriculture and cotton is associated with increasing disadvantage, with increasing reliance on cotton production predicting greater increase in disadvantage than that predicted by increasing agricultural production. While an older workforce is associated with both agriculture and with cotton, the participation rate of those aged 65 or older increases by 1% for each 1% increase in the percentage of GRP attributable to cotton compared to 1.5% increase for each 1% increase in the percentage of GRP attributable to agriculture overall. Similarly for youth unemployment, a 1% increase in the percentage of GRP attributable to cotton predicts a 2% increase in youth unemployment compared to a 3% increase for each 1% increase in the percentage of GRP attributable to agriculture overall.

However, the lack of diversity of the local economy is likely to be a greater indicator of negative socio-economic impacts than the contribution of agriculture or cotton to GRP. Greater or lesser specialisation is likely to be a result of location near larger population centres or access to a wider variety of natural resources rather than a result of agriculture and particularly cotton. As such, the location of cotton growing and irrigated agriculture in communities that exhibit certain socio-economic characteristics are more likely to coincide through circumstances rather than one being the 'cause' of the other. Again, a larger data set would be required to form defensible conclusions about cotton's relationship to areas with poor socio-economic outcomes, and thus what social and economic impacts could be projected if the relative contribution of cotton within a community were varied.

Implications of findings for the future economic and social development of these areas

The primary implication of these findings is the importance of a diversified economy. That said, the ability to diversify seems to be largely an outcome of proximity to population centres or access to a wider range of economic resources, factors over which the cotton industry has limited if any control. While all areas have become less specialised, they lag behind state benchmarks. As an example, between 1981 and 2006 the index of specialisation for NSW decreased by one third while for Warren it decreased by one tenth.

Data examined during this study suggest that policy attempts to increase local economic diversity are likely to have minimal effectiveness in the face of structural changes such as increasing regionalisation of services, technological change and increasing ease of communication and the like. While proposals for knowledge industries may seem relevant, economies of scale, ease of communications and access to markets are likely to work against location of such industries in smaller rural areas. Similarly, Keynesian approaches to employment stimulation in rural areas are often rejected on efficiency grounds, though a case for special assistance to rural communities affected by policy, climatic, technological and other changes is often warranted to assist in the process of modernisation or adjustment.

The fact that cotton production is occurring within the context of such socially and economically disadvantaged communities warrants special consideration when looking, for example, at the social impacts of government policies related to modernisation and environmental remediation through changes to water access and availability. A more detailed assessment of the likely social and economic impacts of specific government policies in the context of other changes would be valuable as part of the policy implementation process. This is to ensure that the benefits of such changes exceed the costs incurred at the local level. It also indicates what mitigation of any adverse impacts on affected groups or communities





may be appropriate with the costs of those mitigations balanced against benefits related to the ‘greater good’ or at a wider geographic scale.

These preliminary findings provide a starting point for a more detailed quantitative and qualitative assessment of such impacts, outlined briefly below.

What we would *like to* know – Recommendations for Further Study

This study has revealed a number of interesting findings and highlighted areas for further research and cooperation between the cotton industry and communities. With this in mind, we make the following recommendations for further research to the Cotton Catchment Communities CRC.

Related Research That Builds on the Pilot Study

In order to build on the current pilot study to form statistically reliable conclusions, we recommend a comparison of selected wellbeing indicators across a wider geographic area and correlated with relevant economic and land use indicators. An expanded geographic scope might include all LGAs in the Murray Darling Basin augmented by non-irrigated agricultural areas in NSW, Qld, SA and Vic if required. By looking at a wider geographic scope, we would be able to look more systematically at the differences between cotton and non-cotton growing areas. This could be done as the first stage in a social and economic impact assessment outlined below, or as a stand-alone exercise.

It is likely that more definite relationships could be discovered through multi-variable linear regression analysis. As noted above, this approach has been constrained in the current study by the small sample size, both of cotton and non cotton communities (5 and 2 regions respectively) and the lack of a measure of resources devoted to cotton (land and production), and independent of workforce and household income.

Parameters to be examined would include proportion of agricultural land devoted to cotton, % of GRP from cotton and agriculture, index of specialisation, Indigenous population, rainfall, proximity to major population centres and the relationship between these variables and a selection of the social and economic indicators considered in this paper such as household income, population growth, age profile, community cohesion, health status, crime rates and the like. This could form an important platform for a detailed social and economic impact assessment, as discussed below.

Social and Economic Impact Assessment of Changes Affecting the Cotton Industry and Irrigated Agricultural Communities

In the short term, it is recommended that the social and economic impacts of key changes currently facing communities with high levels of irrigated agriculture including cotton growing be assessed. In particular, changes in government policy related to water access, availability and usage for communities more reliant upon irrigated agriculture requires appropriate social and economic impact assessment to ensure appropriate mitigation can be put in place to balance the needs of the wider community and physical environment. Such analysis needs to be founded on a sound scientific basis, as discussed above, so that policy can be properly informed by evidence.



It is likely that the social and economic costs and benefits will be experienced differently at different geographic scales or ‘system boundaries’. For example, costs to individual farmers of the modernisation process to reduce water consumption may be experienced differently at the town or LGA level, depending on the extent to which cotton can be replaced by other agricultural activities, and the relative flow on to other economic activities, employment, training, and ultimately other socio-economic outcomes. Likewise, there will be different social and economic costs and benefits at the scale of the region, the Murray Darling Basin, or nationally. The distribution of relative costs and benefits for these different communities needs to be properly assessed, and impacts to small local areas or cotton growing regions cast within this wider understanding of social costs and benefits.

This is particularly urgent given the current global financial crisis, which is likely to have adverse impacts on communities with increasing reliance upon primary extractive industries that have acted as means of diversification and a buffer against drought, long-term climate change and potential changes in relation to water policy. A detailed social and economic impact assessment of the impact of current policy changes is also important given our finding that selected cotton communities are already socially disadvantaged, and have poor outcomes against a range of socio-economic measures. The relative impact of change is likely to be significant in such communities. This will inform both the roll out of policy measures as well as which mitigations may be most appropriate to primary producers and regional communities.

A range of quantitative and qualitative methods would be required within an appropriate social and economic impact methodology.

Tracking Studies

In the longer term, we recommend that this benchmark community wellbeing study be followed by tracking studies timed to coincide with the release of census information every five years. Due to the limited availability of data that is not closely linked to the census, it is unlikely that data on many of the indicators used in the study would be available at a more frequent interval.

For more frequent tracking, we recommend replicating the community and local business surveys annually or every two years in the cotton communities targeted in this study, or alternatively widening the scope to include additional cotton communities. We also recommend increasing the sample size of the survey to achieve more statistically reliable results.





1. Overview of the Study

The *Measuring Community Wellbeing in Cotton Communities Study* has been commissioned by the Cotton Catchments Communities CRC to better understand the status of areas where cotton production and associated activities form a significant component of the regional economy. The *Study* develops a framework and set of social, economic and environmental indicators that aid in understanding how some ‘cotton communities’ are performing against relevant state and national benchmarks in the immediate- and longer-term.

The principal question directing this study asks, how can we better understand the impacts of the Australian Cotton Industry on regional communities? To begin to answer this question, we frame this study as an inquiry into community wellbeing. In our view, ‘community wellbeing’ is displayed through the attributes and long-term capacity of a community to be a place where people **want to live, can live, and prefer to live** compared to other areas. As such, the study is also informed by notions of ‘social sustainability’ that promote long-term community resilience and robustness in the face of change.

We have selected a set of inter-related social, economic and environmental indicators through which to investigate the relative wellbeing of cotton communities. These indicators have been chosen for their relevance to the primary question, and their ability to be easily accessed and replicated over time. The rationale for selecting the indicators, guidance about how easy or difficult individual indicators are to access and apply, and other tools used in this Study are contained in an earlier document, the *Study Framework*, which should be read in conjunction with this Report.

The Study focuses on five selected regions of NSW and QLD and compares their current status against state and national values. Two randomly selected regional areas in NSW, not related to the cotton industry, are also used for comparison. Through the application of these indicators, as well as additional quantitative and qualitative data obtained through interviews with stakeholders, community surveys, and local business surveys, we investigate the nature of the relationship between the Australian Cotton Industry and the wellbeing of the selected communities in order to better understand the extent and nature of any impacts. It should be noted that this is a *pilot* study, which provides some interesting preliminary findings in relation to the selected communities. More importantly perhaps, the framework and related indicators can be replicated in other cotton communities as a ‘snap shot’ exercise, and is also designed to track changes in community wellbeing over time. Long term monitoring and tracking of these indicators will be required for a richer understanding of the complex relationship between the Cotton Industry and community wellbeing. Finally, with some adaptation, the framework is sufficiently robust to be applied in *any* community of interest, regardless of its involvement with cotton production.



2. Aims of Study

The aims of the study are:

- To better understand the current level of wellbeing in selected cotton communities in NSW and Queensland through a process of benchmarking a set of indicators
- To better understand how the wellbeing in the selected communities compares to the wellbeing of other communities (cotton/non-cotton/state and national measures)
- To better understand the relationship between the Cotton Industry and community wellbeing
- To develop a process for updating and replicating the study in order to track community wellbeing and its interrelationship with the Cotton Industry over time.

3. Methodology

3.1. Study Framework

In order to achieve the primary aims of the Study, we must first begin with a definition of community wellbeing. Community wellbeing is the overarching umbrella under which sits the social, economic and environmental fields to be described by the indicators. This can be understood as a framework that encompasses and promotes notions of sustainability and community robustness. Surrounding the three interrelated fields are the external factors that influence community wellbeing, but are not principally indicators of wellbeing themselves.

3.1.1. What is Community Wellbeing?

‘Wellbeing’ has been defined as “a state of healthy development and can be applied to people, organisations and systems, and major policy fields.”⁷

Discussion of community wellbeing often refers to sustainability and the integration between social, economic, environmental, cultural, and governance dimensions. Where once a prosperous economy was seen as the most important aspect of community wellbeing, the concept has shifted beyond ‘what people do for a living’ to a more holistic exploration of ‘how well they live.’⁸ In other words, there are concerns about what the tangible outcomes of economic activity are for a given community or populations, and

⁷ Wiseman, J et al. (2006) *Measuring Wellbeing, Engaging Communities: Developing a Community Indicators Framework for Victoria: The Final Report of the Victorian Community Indicators Project*, Institute of Community Engagement and Policy Alternatives (ICEPA), Available online at www.communityindicators.net.au, p21.

⁸ Kusel, Jonathan (1996) *Well-Being in Forest-Dependent Communities, Part I: A New Approach*, Pages 361-373 in Sierra Nevada ecosystem project: final report to Congress. Vol. II, Assessments and scientific basis for management options. Center for Water & Wildland Resources, Univ. California, Davis, California.





how different members of that community experience these outcomes. Many planning models are now designed to measure broad aspects of wellbeing by looking at the interrelationship between the economic, social and material wellbeing, plus the downside of economic growth, as well as the benefits.⁹ As well, there are concerns about,

“the limits of natural assets; the value of heritage and environment; the need to keep natural systems in balance; the importance of non-material aspects of wellbeing such as cultural, spiritual and psychological considerations; the benefits of strong communities and of social inclusion; and participation and the need to keep sight of benchmark values such as democracy, human rights and active citizenship.”¹⁰

The Rural Assist Information Network defines 'community well-being' as,

“A concept that refers to an optimal quality of healthy community life, which is the ultimate goal of all the various processes and strategies that endeavour to meet the needs of people living together in communities.”¹¹

Further, community wellbeing is said to encapsulate, “the ideals of people living together harmoniously in vibrant and sustainable communities, where community dynamics are clearly underpinned by 'social justice' considerations.”¹² In this sense, there are distributional dimensions of outcomes or impacts on different members of a community that need to be considered over and above the ‘average’ performance of a community against relevant benchmarks.

In our view, ‘community wellbeing’ is displayed through the attributes and long-term capacity of a community to be a place where people want to live, can live, and prefer to live compared to other areas. A framework for investigating this perspective on community wellbeing should focus on the interrelationship between social, economic and environmental factors – with an emphasis on those issues that fall at the intersection between the three fields, as well as an acknowledgment of the external factors that contribute to overall wellbeing but are not in and of themselves indicators of wellbeing. A key element of this approach is the idea of robustness, or how well a community can withstand, respond and adjust to changing circumstances and challenges presented by factors in the external environment.

3.1.2. External Factors

There is a wide range of factors external to a community that influence and shape its social, environmental and economic wellbeing, which the local community itself may have little power to influence. This external ‘environment’ provides a context to experiences of and changes in indicators of community wellbeing. For an agricultural community in the contemporary context, external factors might include global climate change, international and national outputs and markets, government policies regarding

⁹ Wiseman, J et al. (2006) *Measuring Wellbeing, Engaging Communities: Developing a Community Indicators Framework for Victoria: The Final Report of the Victorian Community Indicators Project*, Institute of Community Engagement and Policy Alternatives (ICEPA), Available online at www.communityindicators.net.au, p19.

¹⁰ *Ibid.*

¹¹ Rural Assist Information Network, *Community Well-being and related community topics*, www.rain.net.au/community_wellbeing.htm, Accessed 24 October 2007.

¹² *Ibid.*



welfare or industry subsidies, regional water allocation policies and technological change (uptake of GM varieties, cotton yield per acre). Other factors in the external environment that may affect residents' ability or desire to live in an area include less tangible attributes of the community including its proximity to a regional centre, nature of civil society or leadership, or level of natural or built amenity.

A range of external factors must be taken into account to gain an understanding of what influences a community's objective state and/or experience of wellbeing. However, they are not indicators of community wellbeing unto themselves. They can be tracked along side other indicators to provide context to the interaction between the external factors and community wellbeing. They can also act as predictive tools where it is established, through research, that a change in one may correlated with a change in one or more indicators of community wellbeing. Examples of how these relationships may affect community wellbeing are also explored in a preliminary way in this Report.

3.1.3. Social, Economic & Environmental Fields

The community wellbeing framework that we have developed for this Study is organised into three broad fields – social, economic and environmental, with attention to the intersections between the fields. This type of framework is similar to those that monitor a community's stock of the '4 capitals' including natural, built/produced, human and social. However, whilst the indicators are separated into these three fields, the majority of the indicators lie within the area of intersection between them. For rural communities, the importance of the social field to the performance of the economic and environmental fields is more pronounced than in larger urban settings due to the high value placed on human and social capital. In other words, in rural communities people are often a town's most important resource and sustainability relies on the need for communities to "understand how to make the most of what they have."¹³

Economic

The economic dimension includes aspects related to income and poverty, employment and vitality, investment and stability. Indicators in this field describe factors including:

- Participation in employment
- Disadvantage and advantage
- Investment in training & apprenticeships
- Vitality of local businesses

¹³ Rogers, M (2003) *Small towns: Big Picture – Social Sustainability Indicators and the Arts*, In Social Dimensions of the Triple Bottom Line in Rural Australia, Bureau of Rural Sciences.





Environmental

The environmental dimension includes aspects of both the built and natural environment. This field includes environmental quality and pollution, as well as factors that encourage an active, inclusive and liveable community. Indicators in this field include:

- Amenity of the built environment (eg, housing price, quality, perceptions of amenity)
- Water quality
- Land use composition
- Environmental quality control

Social

The social field includes aspects related to demography, diversity, health, education and learning, safety and social capital. Indicators in this field describe factors including:

- Composition of the population
- Status of physical and mental health
- Services available for groups including children, youth and the aged
- School retention and uptake of adult education
- Level of safety
- Sense of community cohesion and quality of life

The following diagram represents selected indicators of community wellbeing (the overlapping inner circles) within the context of the external ‘environment’ which sets the context to life outcomes and experiences within a given community (the outer rim).

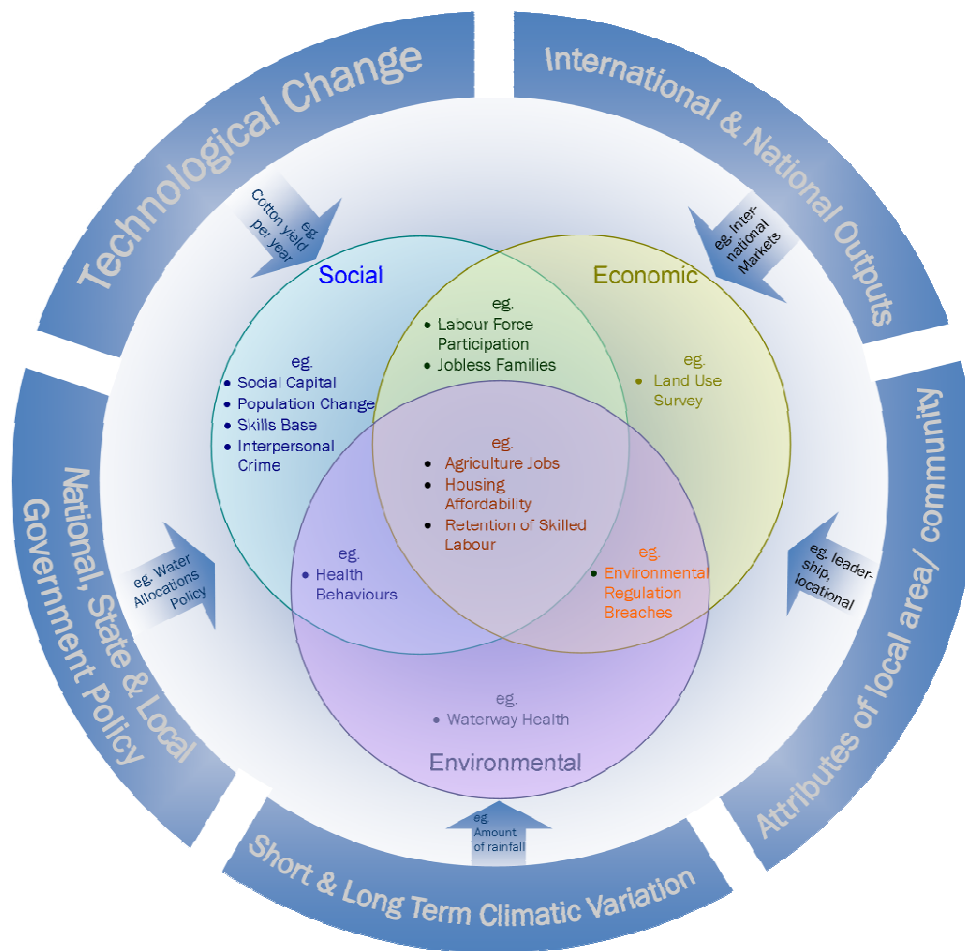


Figure 3.1: Framework of Community Wellbeing & External Factors
Source: JSA 2007

Indicators

'Indicators' are a range of measures used to identify and communicate trends and outcomes. They are tools that help us to "make sense of complex systems."¹⁴

Indicators need to be incorporated within a clear framework to describe aims and track outcomes and progress. For this study, the indicators are selected to measure aspects of community wellbeing as outlined in the framework above with reference to literature and the scoping study. These indicators may be to some extent causal or determinative of socio-economic status (e.g. educational, employment and income levels), or may alert the researcher to the relative presence or absence of social wellbeing (e.g. indicators related to home ownership, poor health or suicide). The ABS refers to these respectively as 'first level' and 'third level' indicators.¹⁵

¹⁴ Rogers, M (2003) *Small towns: Big Picture – Social Sustainability Indicators and the Arts*, In Social Dimensions of the Triple Bottom Line in Rural Australia, Bureau of Rural Sciences.

¹⁵ ABS (2001) *Technical Paper: Census of Population and Housing: Socio-Economic Indexes For Areas (SEIFA)*.



It is sometimes said that indicators are only useful if they are defined, developed and selected at the local level, and if those who are tracking and interpreting the data have an understanding of what the results might mean and are engaged with the system that the indicator is describing.¹⁶ Thus, indicators are often selected, monitored and evaluated in consultation with communities and stakeholders to whom the information is most relevant. Such a process of engagement can be inherently empowering for a community or group, however if the process is “imposed by external agents for external purposes” it can result in a disempowerment.¹⁷ Nonetheless, there are some common understandings of indicators regarding community wellbeing that are common across communities and substantiated in literature. As such, we have relied upon indicators associated in key literature with particular community attributes as well as a more consultative approach to confirming the relevance and importance of selected indicators.

For these reasons, the initial scoping study included desktop research as well as a series of focus groups and interviews with stakeholders in the Narrabri community to discuss and provide input on those aspects of the relationship between the Cotton Industry and the community that they felt was most relevant to track.¹⁸ We consulted with stakeholders in other cotton towns to further refine the list of community wellbeing indicators piloted in Narrabri. It is important to note that the long term viability of this process of monitoring and tracking the relationship between cotton and communities must be an iterative process with communities and stakeholders, especially with regards to setting appropriate indicators and targets for wellbeing.

3.2. Indicator Selection

The development of the study framework and selection of indicators was derived from a literature review and rigorous assessment of a range of possible social and economic indicators for their ability to contribute to the aims of the study. Criteria for selection was based on their accessibility, reliability, and ability to be repeated to ensure that tracking over time can be achieved.

A simplified list of the selected indicators was distributed by email and fax to a range of 28 stakeholders in the pilot community of Narrabri NSW for consultation. Stakeholders were asked to tick alongside each indicator if they felt it should be included in the study, and if so to indicate the level of importance of the indicator for tracking community wellbeing by ranking each as high, medium, or low importance. In addition, the study team gave a presentation to a group of stakeholders in Narrabri in early November 2007, where the indicator consultation form was further distributed. 7 participants completed the consultation form at this forum. In total, 17 stakeholders in Narrabri completed the indicator consultation forms.

Results from this consultation show that, overall, the vast majority of respondents agreed with the types of indicators proposed across the selected social, economic and environmental indicators. There was slightly

¹⁶ McKenzie (2002) 26). Rogers, M (2003) *Small towns: Big Picture – Social Sustainability Indicators and the Arts*, In Social Dimensions of the Triple Bottom Line in Rural Australia, Bureau of Rural Sciences, citing Meadows, D (1998) *Indicators and information systems for sustainable development*. A report to the Balaton Group. Hartland Four Corners (VT): The Sustainability Institute, p7.

¹⁷ Rogers, M (2003) *Small towns: Big Picture – Social Sustainability Indicators and the Arts*, In Social Dimensions of the Triple Bottom Line in Rural Australia, Bureau of Rural Sciences, citing Kenny, S (2002) *Evaluation and community development: Mantras challenges and dilemmas*, Paper presented at the 2002 Australasian Evaluation Society Conference, October.

¹⁸ Op cit.



less support for inclusion of some of the health behaviours and housing related indicators, though a clear majority were in favour of including these indicators. Some additional indicators were proposed. However, these were generally not feasible (e.g. number of children at boarding school) or were already in our detailed list. Indicator consultation materials are provided in **Appendix A**.

Some indicators selected required primary research to be conducted. We have developed a kit of survey instruments for inquiry of real estate agents, local businesses, and community residents, and these are provided at **Appendix B, C and D**.

The indicators have been applied to the selected cotton communities in NSW of Moree Plains, Narrabri, Narromine, Warren, and the QLD communities of Dalby and Millmerran QLD (Cecil Plains). These communities have been compared to Balance NSW¹⁹, Balance QLD²⁰, NSW, QLD and Australia values. For the majority of indicators, data is reported based on LGA boundaries, as this is a standard geographical classification common to all of the communities. The majority of data sets – especially those from the Australian Bureau of Statistics (ABS) – are available by LGA. The key difference is for Cecil Plains QLD. Due to this community's small size, both geographically and population wise, data sets do not exist at the town locality. As a result, data for this area are reported for the Millmerran LGA, which includes the Cecil Plains and Millmerran townships. Certain indicators are reported for slightly different geographical areas - such as Census Collection Districts – depending on data availability. Any such variations are noted next to graphs and tables. There are also certain difficulties with obtaining data for comparison between NSW and Queensland due to the differences in data collection and reporting between the two states. This is especially apparent in the data on crime statistics. Again, any such variations are noted throughout the report.

Data was obtained from a variety of sources including the Australian Bureau of Statistics (ABS), Public Health Information Development Unit (PHIDU), NSW Department of Education and Training, Queensland Department of Education, Training and the Arts, NSW Department of Planning, NSW Department of Housing, NSW Department of Ageing, Disability and Home Care, NSW Bureau of Crime and Statistics Research, and the Queensland Office of Economic and Statistical Research. The majority of the information is available at no charge on the Internet or by request to specific agencies and government departments. Only a small proportion of the data was obtained for a fee, by special order to the ABS. As such, interested stakeholders should be able to repeat many of the indicators should they so wish.

3.3. Stakeholder Interviews

Where more detailed information and insight is required for particular indicators to gain a richer understanding of the results obtained through the desktop research, we conducted a number of semi-structured interviews with service providers, real estate agents and other key informants in each community. Contact details for the individuals and organisations contacted were obtained through the Internet and community directories. Service providers such as health care and aged care providers were

¹⁹ Balance NSW refers to all of NSW minus the Sydney Statistical District. This value aims to provide a more accurate comparison to other rural and regional areas in NSW.

²⁰ Balance QLD refers to all of QLD minus the Brisbane Statistical District. This value aims to provide a more accurate comparison to other rural and regional areas in QLD.





asked a standard set of questions, while interviews with other stakeholders such as youth workers and representatives from schools took a less structured approach. Findings from these interviews are interspersed throughout the report where relevant.

3.4. Community Survey

‘Social capital’ is often referred to as the ‘glue’ that brings and holds communities together – the presence of shared trust between community members. Jacobs (1961) describes the development of mutuality or common responsibility emerging as a ‘lesson nobody learns by being told. It is learned from the experience of having other people without ties of kinship or close friendship or formal responsibility to you take a modicum of public responsibility for you’.²¹ Similarly, Putnam (1995) talks of ‘social capital’ as ‘working cooperatively for the benefit of all’, or the ‘dedication of individual time and resources’ to a common goal.²²

A related concept is that of ‘social cohesion’, which explores the extent to which there is an inter-relationship or connectedness between residents of a given area or social group. At the meso-level, Buckner (1988) developed a ‘neighbourhood cohesion instrument’, using what he regarded as three dimensions of cohesion in neighbourhoods: sense of community (e.g. "I feel like I belong to this neighbourhood"), attraction to neighbourhood (e.g. "Overall, I'm very attracted to living in this neighbourhood"), and degree of interaction within the neighbourhood (e.g. "I visit with my neighbours in their homes").²³ Other social theorists such as Vinson (2004) have conceptualised ‘social cohesion’ as containing three key elements: social and support networks; social participation; and community engagement.²⁴

The relative presence or absence of these attributes can have a significant impact upon quality of life and sense of satisfaction in a given community, and thus the desire of residents to remain in an area, their commitment to work together for the good of all at a time of change or significant challenges, and the like. These concepts are therefore highly relevant to this study of community wellbeing and resilience.

21 Jacobs, J. (1961) *The Life and Death of Great American Cities*. New York: Random House

22 Putnam, R. (1995) *Bowling Alone: the Collapse and Revival of American Community*, New York: Schuster & Schuster

23 Buckner, J.C. (1988) ‘The development of an instrument to measure neighbourhood cohesion’, *American Journal of Community Psychology*, 16:771-91

24 See for example Vinson, T. (2004) *Community adversity and resilience: the distribution of social disadvantage in Victoria and New South Wales and the mediating role of social cohesion*, Ignatius Centre, Jesuit Social Services. Melbourne. Vinson outlines three key components of social cohesion: social and support networks (including access to social support in times of need); social participation (as the obverse of social isolation and being cut off from relationships providing friendship and company); and community engagement (including volunteering which draws people together to work for the benefit of others).



Whilst some data does exist through the ABS regarding social capital, more often than not this information is not available for small LGA areas like the cotton communities targeted in this study. We report on ABS data for the rate of volunteering for organisations. However, primary research was required in order to obtain additional information about the level of social capital, perceptions of quality of life, and perceptions of the cotton industry amongst residents of the cotton communities. In order to establish benchmark values for these indicators, we conducted a telephone survey of 30 residents in each of the cotton communities, for a total of 180 completed surveys.

Telephone numbers were selected at random from the White Pages telephone book for each locality. Calls were made in the late afternoon and early evening periods. Approximately 100 to 125 calls were required to obtain the 30 completed surveys for each community. Each telephone survey lasted approximately 15 minutes.

The number selected was limited by the scope of the project. Given the small size of the sample, conclusions are unlikely to be robust. However, levels of confidence can be calculated are likely to be reasonable where a particular value is highly represented.²⁵

3.5. Local Business Survey

In order to obtain information about the vitality and wellbeing of local businesses, we developed a simple survey specifically for businesses. The survey was piloted with 23 local businesses in Narrabri during a visit by the study team to the area. The survey was conducted face to face with businesses in Narrabri. Based on the success of the pilot, the survey was mailed out to a selection of businesses in each of the other study communities (n=400) with a self-addressed stamped envelope for ease of return. As of 13 December 2007, we received 58 surveys for a 14.5% rate of return of those surveys mailed out. Given the small number returned in some areas, the results are unlikely to be statistically robust. However, the findings are useful in a more qualitative sense to inform other data.

3.6. Replication of the Study

The set of indicators chosen is designed to be replicable and relatively easy to interpret. We acknowledge that this list is lengthy and quite comprehensive, thus it may be more realistic for local governments and communities to select certain indicators from this list for replication on an on-going basis depending on local conditions and issues of greatest concern and interest to the local community. It is hoped that the indicators will serve as a tool for decision makers, stakeholders and communities to use to inform strategies and policies to build better and stronger communities, and ultimately enhance wellbeing.

As noted above, the rationale for the selection of these indicators, notes on their application, and other tools used in the study are provided in the *Study Framework* that accompanies this Report.

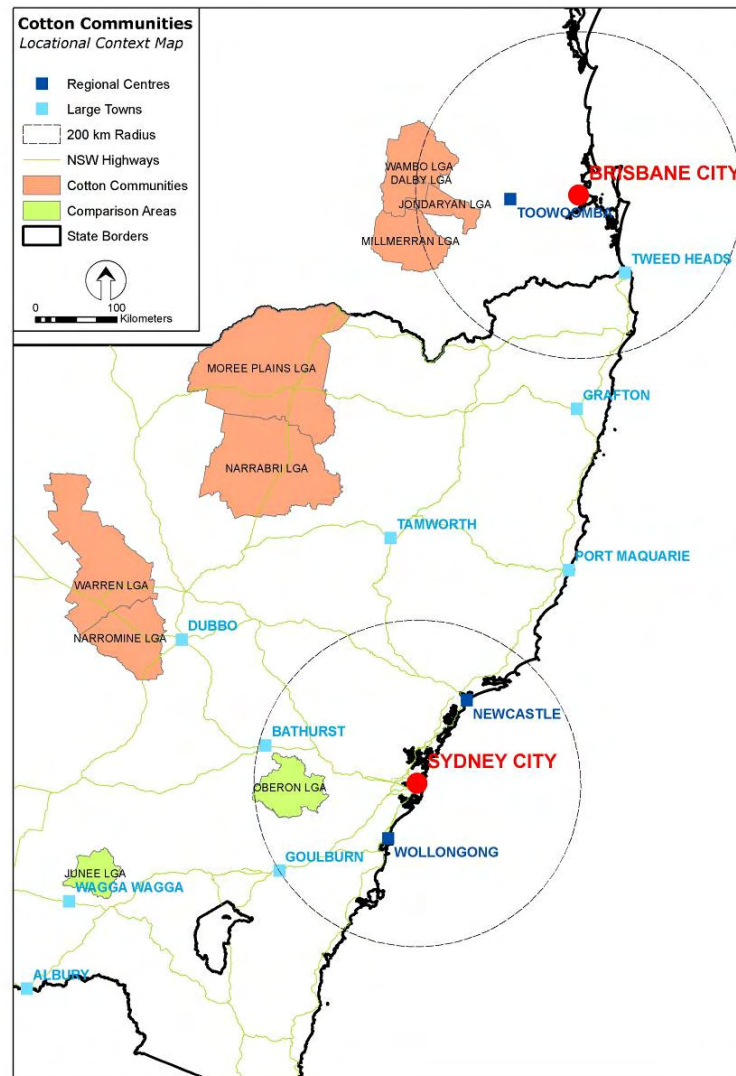
²⁵ E.g. Where the response to a question is 80% for one answer, one could be 95% confident for Narrabri that the true value lay between 65% and 95%.



4. Snapshots of the Cotton Communities

This project investigates the wellbeing of a selection of communities in the cotton producing areas of the Darling Downs, Border Rivers/Gwydir, Namoi and Macquarie catchments. Whether it is topography, amount of water present in the landscape, or proximity to larger regional and urban centres, each catchment and the communities found there have unique natural and social characteristics that contribute to their economic, social and environmental wellbeing. The Queensland cotton communities of Dalby/Wambo and Millmerran are within the

200 kilometre striking distance to the capital city of Brisbane, and quite close to the large urban centre of Toowoomba. The NSW communities on the other hand, are all further removed from a capital city – whether it is Brisbane or Sydney, or any large regional centre. These differences in proximity to large cities and urban centres undoubtedly have an influence on the opportunities in these communities, as well as the causes of in and out migration – regardless of whether or not land in the catchment is dedicated to cotton production. The presence of water in the landscape is of profound importance to the viability of cotton production. The prolonged drought that has gripped much of the country over the past few years has been felt strongly by cotton growers, their related industries and communities.



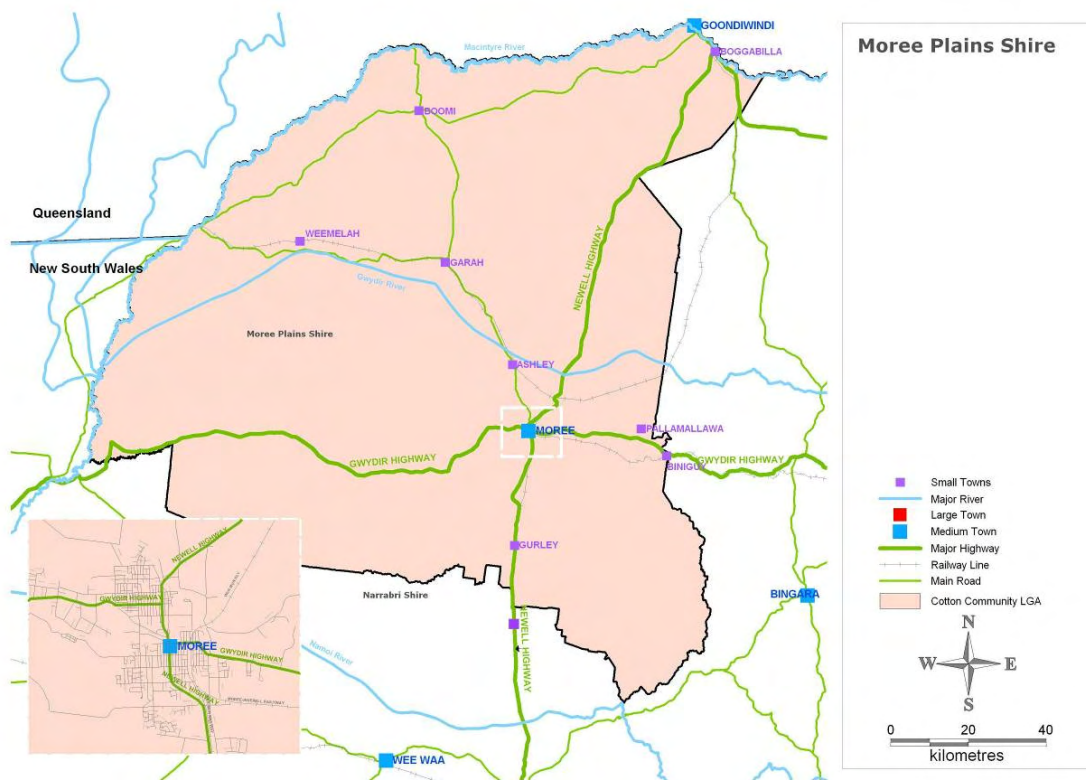


4.1. Moree Plains, NSW

Table 4.1: Moree Plains LGA Snapshot

Moree Plains LGA	
LGA Area	17927.7 Km ²
Total Population (2006)	14,185
% Population that is Indigenous (2006)	18.6%
Average Annual Rainfall	578 mm (Moree Post Office)
Towns & villages	Moree, Boggabilla, Mungindi

Source: ABS Census 2006, Bureau of Meteorology 2008, Moree Plains Shire website.



The population of Moree Plains has steadily declined over the last two decades, in common with most areas of inland Australia. Employment has also declined, whether recorded as where people live or where they work. In recent times, there has been an increasing amount of commuting across the shire boundaries with a rising net commuting out to other places. Those workers are travelling to jobs in many industries including beef cattle, grains, residential building, construction trades, retail trade, legal and accounting and other business services. There were no industries with significant commuting in. It is possible that some of this is normal around the Shire boundaries.





Moree has long been a 'good place to make a quid', but has faced some set backs in the last few years due to the impact of the drought.²⁶ Many people have experienced a hard time due to the drought, with some businesses doing only half of the business they would normally be doing. Those growing cotton have only been able to grow a fraction of the crop that they would during times of higher rainfall.²⁷

Due to the drought conditions and the technological advancements with cotton, many of the seasonal and casual labourers have come off the cotton farms and into town looking for work. As there are few opportunities in town for them these days, many people have moved on to look for other work. There is a concern amongst those who have stayed in town that eventually when the drought breaks, there will be no workers to fill the jobs that will be there again. The mining boom, both locally and across the country, has taken a lot of the skilled labour out of the area, and there is concern that these skilled workers will not return to the area even if there is work for them in the future.

The community supports and enjoys a range of cultural and arts activities and events that are held throughout the year. There is a need for additional recreation for young people in town, and strategies for attracting and retaining skilled health and social service providers.²⁸

There is hope that a new bypass and the location of Big W in Moree will be positive influences on the area. The hope is that Big W will help the local economy by keeping people in town to do their shopping instead of travelling to a larger centre, and will hopefully attract shoppers from other areas.²⁹

²⁶ Telephone interview with Rotary Club of Moree on Gwydir representative, 04 December 2007.

²⁷ Telephone interview with Moree Chamber of Commerce representative, 04 December 2007.

²⁸ Telephone interview with Moree Community Health Service representative, 05 December 2007.

²⁹ Ibid.



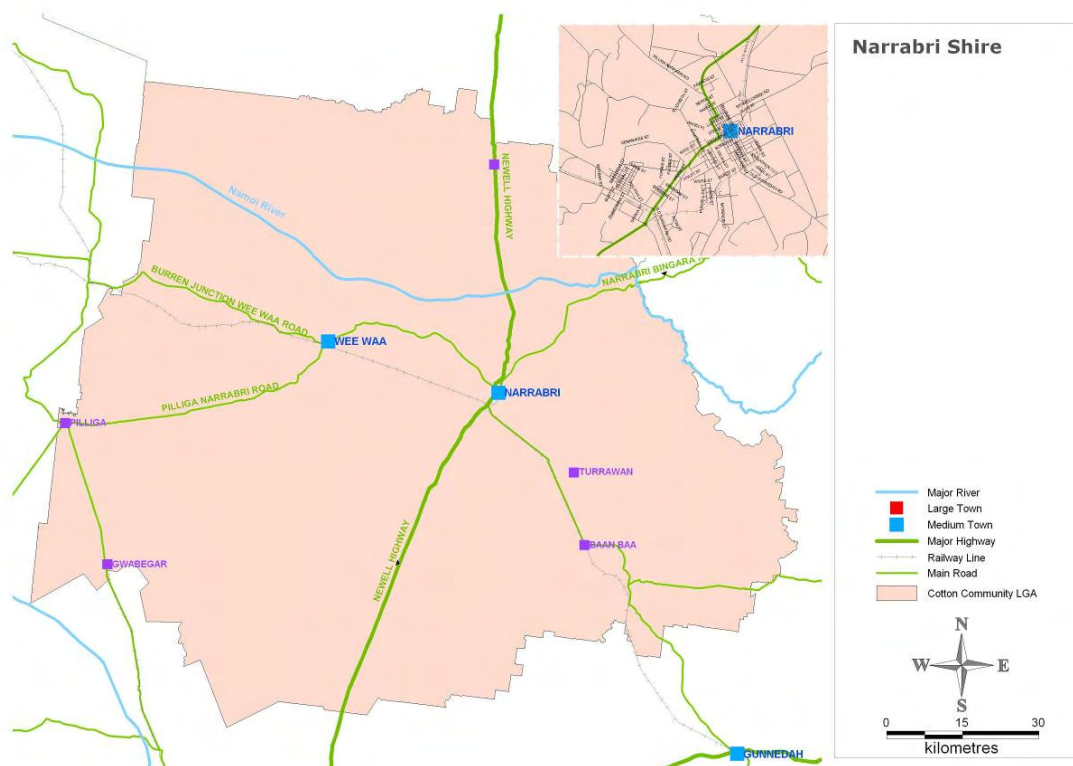
4.2. Narrabri, NSW

Table 4.2: Narrabri LGA Snapshot

Narrabri LGA	
LGA Area	13,030.6 Km ²
Total Population (2006)	13,051
% Population that is Indigenous (2006)	9.4%
Average Annual Rainfall	643.2 mm (Narrabri Bowling Club)
Towns & villages	Narrabri, Boggabri, Wee Waa

Source: ABS Census 2006, Bureau of Meteorology 2008, Narrabri Shire Council website.

The Narrabri population has been steadily declining over the last two decades in common with most areas of inland Australia. Employment both where people live or where they work has also declined. In recent years, drought is likely to have had an impact on this decline – though it is difficult to assess.



In recent times, there has been an increasing amount of commuting across the shire boundaries with a rising net commuting out to other places. Those workers are travelling to jobs in many industries including services to agriculture and mining, construction, trade, road transport, legal and accounting, and other business and community services. This indicates that Narrabri is developing as a residential centre





for people working in a range of services that extend beyond the region. Perhaps, some of this is temporary and related to the drought effects that were significant in 2006.

Residents agree that Narrabri has felt the impact of the recent drought. The community is holding up reasonably well, though employment is 'patchy'.³⁰ Cotton contributes significantly to the income of the community - when there is water. Unlike other types of farming, the additional processing through the cotton gins and seed crushing also takes place locally. This creates additional employment and a flow-on affect to other industries. Due to the changes in cotton technology, the need for chippers has decreased - many of who were school kids, unemployed women and travellers.³¹

The town of Narrabri is viewed by many of its residents as a close-knit community with plenty of support from neighbours and families for community initiatives. Narrabri has all the basic health and education needs well covered, though travel to Tamworth for specialty services is difficult for many.³² There is also concern about the difficulty to retain skilled social services staff, especially mental health providers and counsellors. As a result, there is a sense that the community must look out for one another by noticing changes in people and assisting them to seek out help. There is also a high demand for youth services across the LGA, especially outside of the Narrabri centre. Initiatives are underway to improve services and assist the areas to build up their own programs.³³

³⁰ Telephone interview with Narrabri Rotary Club representative, 04 December 2007.

³¹ Ibid.

³² Telephone interview with Namoi Valley Aged Care Hostel, 06 December 2007.

³³ Telephone interview with Narrabri District and Community Aid Service youth worker, 04 December 2007.



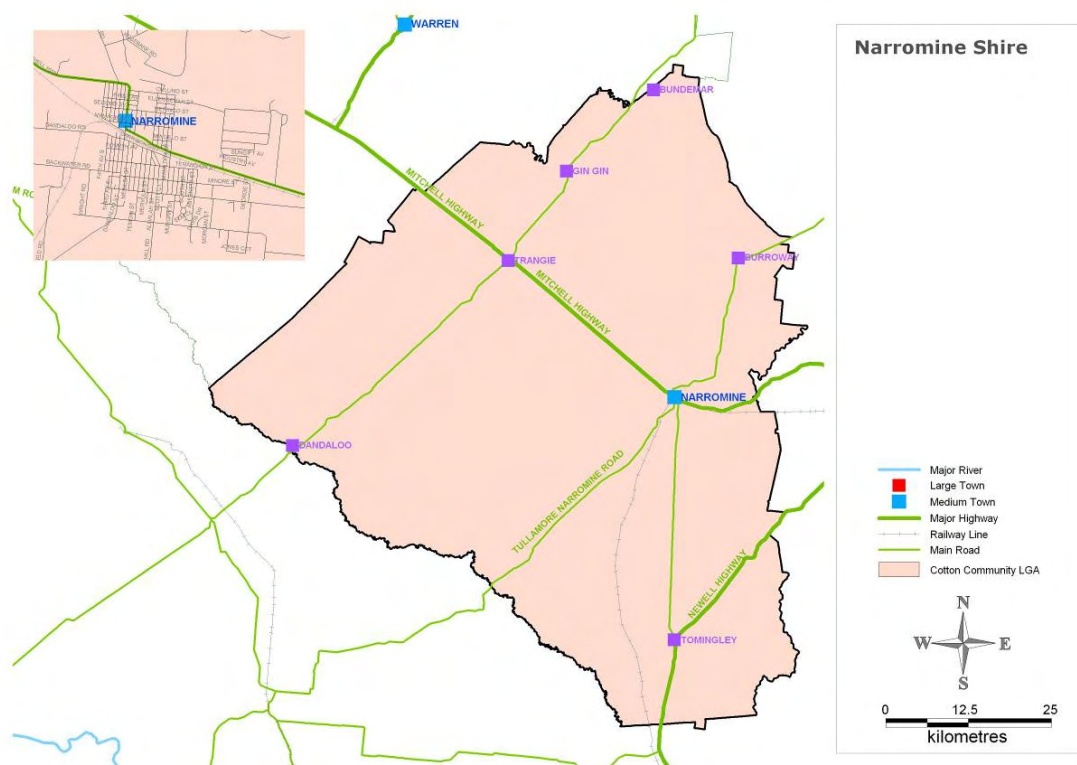
4.3. Narromine, NSW

Table 4.3: Narromine LGA Snapshot

Narromine LGA	
LGA Area	5,263.6 Km ²
Total Population (2006)	6,406
% Population that is Indigenous (2006)	15.9%
Towns & villages	Narromine, Trangie, Tomingley

Source: ABS Census 2006, Narromine Shire Council website.

Narromine is a small community in Central NSW approximately 40 kilometres from Dubbo. Although there are tremendous advantages to being in close proximity to a larger regional centre, there is a strong sense of pride that the area does not have the hustle and bustle of a larger town or as some say ‘the big town syndrome’. The Narromine population has been relatively steady over the last two decades, unlike most areas of inland Australia that have declined. Whilst employment has declined, Narromine has been able to maintain its population mainly by becoming more integrated with the regional centre of Dubbo. There has been a high level of commuting from Narromine to work, mostly to Dubbo. Those workers are



travelling to jobs in many industries: grains, residential building, construction trades, wholesale trade, retail trade, road transport, communications, legal and accounting, government administration, health and community care. There were no Narromine industries with significant net commuting in.





Narromine residents are described as warm, friendly, welcoming and willing to pitch in to help the town keep going and do well.³⁴ The recent drought is viewed as having a large impact on the wellbeing of the community, especially with regards to unemployment and subsequent mental health issues such as depression – though services are able to accommodate for this increase in need.³⁵ Narromine is praised for having fantastic health and social services despite its small size.³⁶

³⁴ Telephone interview with Narromine Rotary Club President, 04 December 2007.

³⁵ Telephone interview with Narromine Community Health Centre representative, 30 November 2007.

³⁶ Telephone interview with Narromine Preschool Kindergarten representative, 30 November 2007.

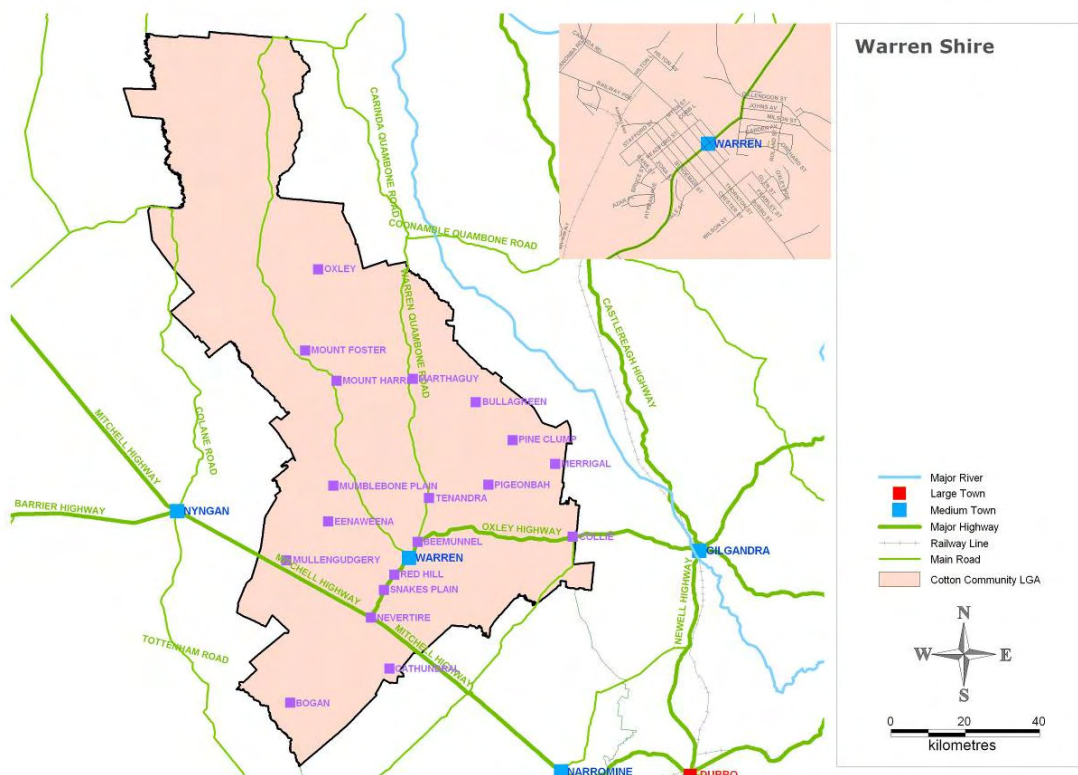


4.4. Warren, NSW

Table 4.4: Warren LGA Snapshot

Warren LGA	
LGA Area	10,760.3 km ²
Total Population (2006)	2,676
% Population that is Indigenous (2006)	12.4%
Average Annual Rainfall	515 mm (Auscott)
Towns & villages	Warren, Collie, Nevertire

Source: ABS Census 2006, Bureau of Meteorology 2008, Warren Shire Council website.



Warren is located in the west of NSW on the Macquarie River in the Macquarie Valley, approximately 120 kilometres northwest of Dubbo.³⁷ It is the most remote of the case study regions and relatively small in population terms. The population has steadily declined in the past few decades. There has been a corresponding decline in employment by residence and workplace, mirroring the population trend but also likely the result of pressure from the drought. There is a significant amount of commuting by Warren residents into other areas beyond the Shire to work, mainly in agricultural activities.

³⁷ Warren Shire website, www.warren.nsw.gov.au





Like the other cotton communities, Warren is likewise feeling the impact of the drought. Due to the reduction in cotton in the past three years, many people are out of work and are leaving the area in search of work. Despite the downturn, there are still good services in town including two doctors, shops and the ambulance. Other types of farming, cattle and sheep have also continued.³⁸

Warren is described as having a strong sense of community that provides a sense of belonging. The ease and affordability of small town life is also benefits of life in the area.³⁹ The community is thought to have a strong spirit and sense of responsiveness, such that if people see a need to do something for the community they will come together in support.⁴⁰

³⁸ Telephone interview with Warren Land Council representative, 04 December 2007.

³⁹ Telephone interview with Calara House representative, 05 December 2007.

⁴⁰ Telephone interview with Warren Community Health Centre representative, 30 November 2007.



4.5. The Darling Downs Region, QLD

The Darling Downs is a growing region with all three primary centres including Dalby/Wambo, Millmerran and Jondaryan. Dalby/Wambo and Jondaryan are areas where there is considerable net commuting to other centres (especially Toowoomba), while Millmerran has net commuting in for local employment. Much of the commuting out from Dalby/Wambo is to jobs in agriculture, electricity, meat processing, building and road transport. There is a net commuting in of education and health workers.

Since the study began Council amalgamations have occurred, such that Dalby and Wambo are now apart of the Dalby Regional Council while Jondaryan and Millmerran are now apart of Toowoomba Regional Council. Despite these recent developments, 2006 ABS data is based on the original Shire boundaries. This study looks primarily at Dalby and Millmerran as representative areas of the Darling Downs region, however for some indicators (particularly economic) Wambo and Jondaryan are also considered.

Dalby, Wambo & Millmerran

Dalby Town Shire is approximately 85 kilometres from the larger regional centre of Toowoomba, and 210 kilometres from the capital city of Brisbane. The town is viewed to be well serviced and have access to a range of sporting and recreational activities.⁴¹ Due to the relatively small size of the community, there is a sense of connection and high level of community engagement.⁴²

The Millmerran Shire is in the Darling Downs region of Queensland, approximately 220 kilometres southwest of Brisbane and 80 kilometres southwest of Toowoomba. Cecil Plains is a village in the Millmerran Shire. Cecil Plains is described as a quiet community with a strong community spirit and a sense that 'people seem to know everyone.'⁴³ Similar to the other cotton areas, the drought has had an impact on the wellbeing of the community. Similar to many of the cotton communities, the need for improved access to counselling services was also been mentioned.⁴⁴

⁴¹ Telephone interview with Dalby South State School Deputy Principal, 30 November 2007.

⁴² Telephone interview with Dalby Police Station Crime Prevention Officer, 06 December 2007.

⁴³ Telephone interview with Cecil Plains Spiritus Bush Nurse, 05 December 2007.

⁴⁴ Telephone interview with Cecil Plains police station Officer in Charge, 30 November 2007.





Darling Downs Regional Centres

Table 4.5: Darling Downs Regional Centres Snapshot

	Millmerran LGA	Dalby Town LGA	Wambo Shire
LGA Area	4520.8 km ²	47.9 Km ²	5709.7 Km ²
Total Population (2006)	3,078	9,857	5,230
% Population that is Indigenous (2006)	2.9%	6.0%	2.7%
Average Annual Rainfall	DNA	676 mm (Dalby Post Office)	627.7 mm (Oakey Aero)
Towns & villages	Millmerran, Cecil Plains	Dalby	Oakey

Source: ABS Census 2006, Bureau of Meteorology 2008, Dalby Town Council website.



5. Economic Indicators

Economic indicators tell us about aspects of community wellbeing through information about jobs, participation in the workforce, levels of unemployment, and uptake of apprenticeships and traineeships.

They provide an indication of the diversity of the regional economy and the appropriateness of its skills base, the ability of the local labour market to generate sufficient and appropriate employment to retain and/or grow population, the extent of business confidence and succession planning, and the like. In this way, they provide an indication of existing wellbeing of the community and the extent to which the local economy and labour market (and thus community) may be resilient in the face of change. Topics covered by the economic indicators included in this study are:

- Value of agricultural production
- Impact to the economy from cotton growing
- Diversity in the economy
- Labour force participation
- Unemployment
- Job containment
- Traineeships and apprenticeships

5.1. Economy Summary Measures

The information in this section is built mainly on analysis of the detailed employment data collected every five years as part of the ABS census of population and housing. Other data are taken from the input-output table for the region compiled for this project by CARE. A summary of the key statistics for the cotton communities is shown in the Table below. These are measures used in the national accounts and applied at the regional level. The key features of these estimates are: GRP, GRP/capita, exports and imports, and household earnings and expenditure.

We see some interesting differences between the cotton communities, quite varied levels of GRP/capita – with Moree Plains the highest at \$43,291 and Narromine the lowest at \$31,505. There are also varying trade balances amongst the study areas, with Narrabri, Narromine and the Darling Downs regions are estimated to have imports exceeding exports, while Moree and Warren (though slightly) show exports exceeding imports. There are also differences in the extent of household expenditure exceeding employment earnings – with the Darling Downs reporting the highest level of expenditure exceeding earnings and Warren the least. The differences will be made up from other sources of income including welfare payments, withdrawals from savings and superannuation, earnings from investments, operating surpluses from owner-operated businesses, borrowings and the inclusion of an imputed value of dwellings. The poor seasonal conditions and drought are likely to have exacerbated this deficiency.



Table 5.1: Economy Summary Measures

	Narrabri	Moree	Narromine	Warren	Darling Downs
Gross Regional Product (\$mil)	520	605	205	110	1,278
Population 2006	13,118	13,975	6,507	2,750	32,196
GRP/capita \$	39,640	43,291	31,505	40,000	39,694
Exports \$m	423	494	124	102	975
Exports share of GRP %	81	82	60	93	76
Imports \$m	452	436	181	101	1,128
Imports share of GRP %	87	72	88	92	88
Trade Balance \$m	-29	59	-57	1	-153
Household Employment Earnings \$m	228	253	77	42	647
Household Expenditure \$m	397	423	198	83	981
Household Balance \$m	-169	-169	-121	-41	-334

Source: Centre for Agricultural and Regional Economics (CARE), 2008

5.2. Gross Value of Agricultural Production

Agricultural production is a key factor in the performance of the economies of the cotton communities. The value of production is indicated in the Table below including some estimates for 2005-06 that may prove to be conservative. This highlights not only the high dependence on agriculture in these areas, but also the varying degrees of specialisation and diversity within agriculture. There is considerable variation in agricultural production, both in total output and between commodities. This reflects variations in natural conditions such as drought and flood, and with producers moving between commodities in response.

Table 5.2: Gross Value of Agricultural Production

Commodity	Narrabri			Moree Plains			Narromine			Warren			Darling Downs		
	1996-97 \$m	2000-01 \$m	2005-06 \$m	1996-97 \$m	2000-01 \$m	2005-06 \$m	1996-97 \$m	2000-01 \$m	2005-06 \$m	1996-97 \$m	2000-01 \$m	2005-06 \$m	1996-97 \$m	2000-01 \$m	2005-06 \$m
Cotton	200	163	180	404	321	318	39	52	32	88	88	40	127	83	114
Wheat	85	39	75	218	74	300	63	40	60	56	27	35			
Cattle	14	25	24	21	37	34	9	8	8	8	19	17	65	110	120
Barley	9	2		37	15		6	1		2	1				
Wool	6	5		1	8	11	11	10	11	13	11	12			
Pigs	4	6		2	1								10	25	45
Sorghum	3	4		11	31										
Other Crops	2	2		10	17		2	7	11						
Sheep	2	3		4	3		4	6		4	5				
Other Cereals	2	1		2	2		4	2		2	0				
Oilseeds	2	1		5	3					1	1				
Vegetables	1	1													
Milk	0	1													
Other Fruit				4	2										
Citrus							3	3							
Hay										1	0				



Commodity	Narrabri			Moree Plains			Narromine			Warren			Darling Downs		
	1996-97	2000-01	2005-06	1996-97	2000-01	2005-06	1996-97	2000-01	2005-06	1996-97	2000-01	2005-06	1996-97	2000-01	2005-06
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Poultry													6	24	27
Grains													150	72	79
Other													48	57	
Total	330	253	279	719	513	663	141	128	122	177	153	104	406	371	385

Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.3. Impact of Cotton Growing

Unarguably cotton plays a large role in the economy, culture and wellbeing of these communities. But just how influential is cotton to these economies? The information presented in this section looks at the direct effects and total impact (including flow-on) of cotton growing to aspects of the economy including gross output, value-added, household income and employment.

5.3.1. Direct Effect of Growing Cotton

The figure below compares direct effect of growing cotton on the Gross Output, Value-Added and Household Incomes of the study areas. We see that cotton growing contributes significantly to the gross output of Moree Plains, Narrabri and the Darling Downs – but to a lesser extent in Narromine and Warren. A similar trend is observed for value-added and household income, although Moree appears to add significantly less value proportional to Gross Out than would be expected by comparison to other regions.

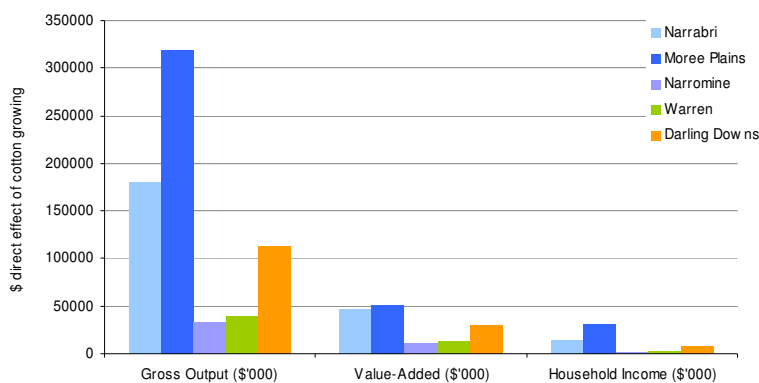


Figure 5.1: Direct Effect of Cotton Growing on Economies
Source: Centre for Agricultural and Regional Economics (CARE) 2008





5.3.2. Total Impact of Growing Cotton

The figure below describes the total impact of cotton including the direct effect plus flow-on effects. Flow-on effects are concentrated mainly in the production category and are a reflection of the large amount of services that are purchased by growers from other specialists. This includes cotton ginning, consultants and contracted farm operations such as spraying. We see that the total impact of cotton varies between the towns, such that it plays a much more significant role in Narrabri, Moree Plains and Warren compared to Narromine and the Darling Downs.

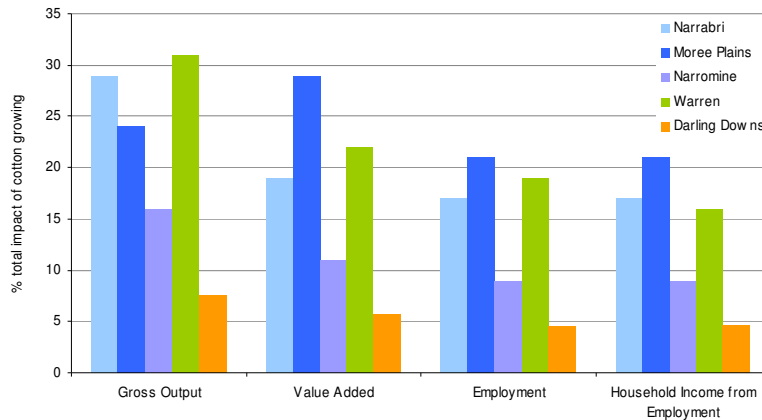


Figure 5.2: Total Impact of Cotton Growing on Economies
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.3.3. Employment Impact from Growing Cotton

The following figure shows the number of jobs that are the result of the direct effect or total impact of growing cotton. Note the higher employment generated as the result of total impact, especially in Narrabri, Moree Plains and Darling Downs – this is the result of the many and varied flow-on industries and specialisations present for the cotton industry in these areas.

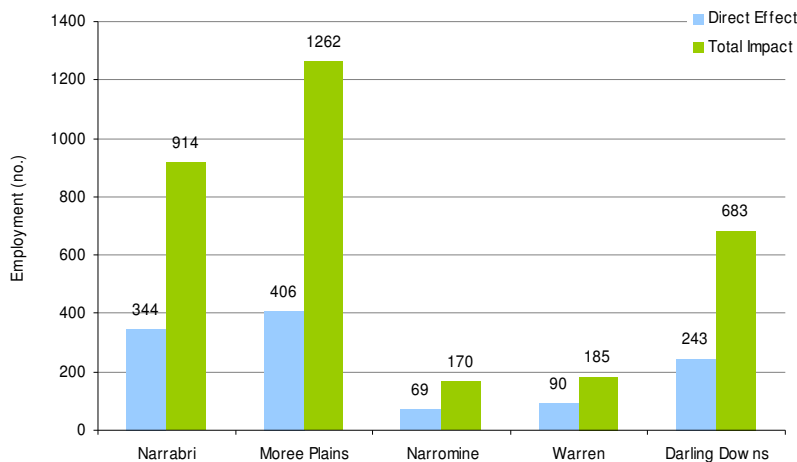


Figure 5.3: Employment Impact of Cotton Growing
Source: Centre for Agricultural and Regional Economics (CARE) 2008



5.3.4. Household Income Impact of Growing Cotton

A similar trend to employment impacts of cotton growing is repeated here when we look at the impact on household income from growing cotton.

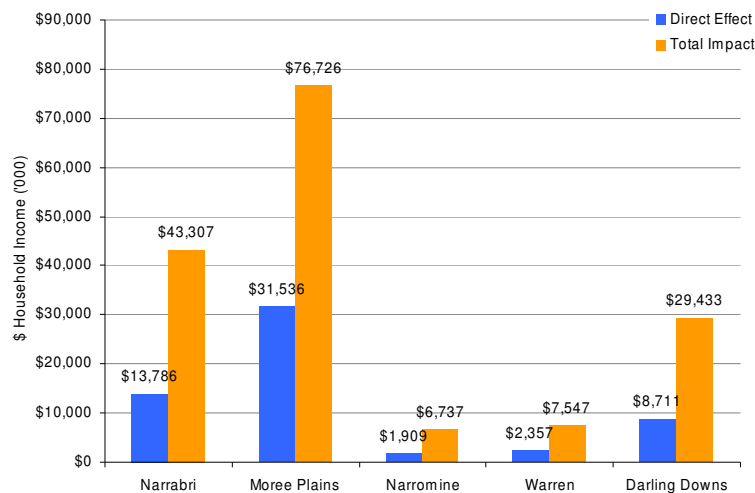


Figure 5.4: Household Income Impact of Cotton Growing
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.4. Diversity in the Economy

The coefficient of specialisation index shows the level of diversity in an economy using the Australian economy as the benchmark. The index ranges from 100 for a one-industry economy (very low diversity) to 0 for the Australian economy (high diversity). Therefore the higher the index value, the lower the diversity of the economy. A high value would suggest that new efforts towards diversification might be needed. The following figures track this index from 1981-2006 for the NSW communities, and 1991-2006 for the QLD communities.

5.4.1. Index of Specialisation NSW

Figure 5.5 shows that all of the NSW cotton communities have a much lower level of diversity than NSW, which we might expect. Narrabri and Moree appear to have had quite a similar trend of slightly increasing diversity over the years. Narromine is less diverse than Moree and Narrabri, though has continued in diversify over the years. Warren is the least diverse of the NSW towns, likely representative of its more distant position and small size. While Warren appears to have continued to diversify through the 80's and





90's, this trend has reversed in recent years – likely due to businesses that have closed as a result of poor conditions and drought.

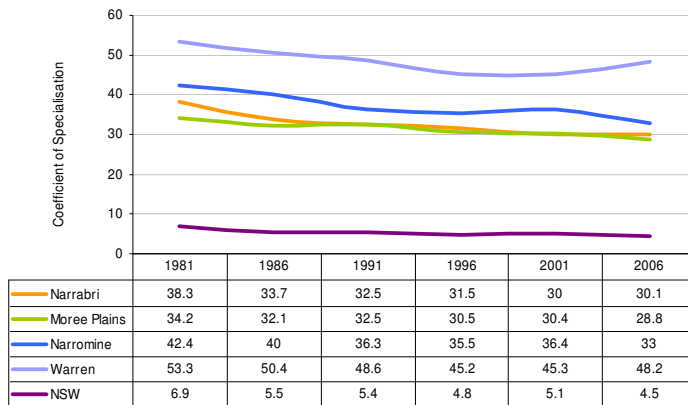


Figure 5.5: Index of Specialisation NSW 1981-2006
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.4.2. Index of Specialisation QLD

Figure 5.6 shows that the QLD cotton communities have a lower level of diversity than QLD. Dalby/Wambo and Jondaryan have nearly identical trends and levels over the past decade or so. Millmerran has a significantly lower level of diversity compared to the other areas. This is likely due to the proximity of Dalby and Jondaryan to the larger centres of Toowoomba and Brisbane. While Millmerran is more distant geographically, it has continued to diversify over the years.

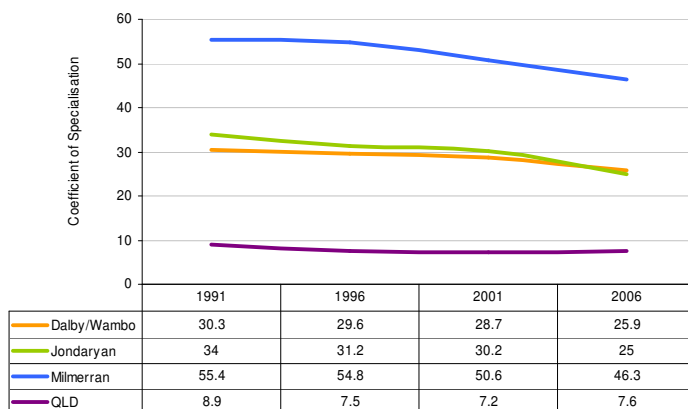


Figure 5.6: Index of Specialisation QLD 1991-2006
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.5. Labour Force Participation

The labour force participation rate is a measure of those aged 15 years and over that are either employed or actively seeking employment over the total population in that same age group. The labour force participation rate excludes those individuals in the population who are out of the labour force, including



retirees, pensioners and people engaged solely in home duties, full time students and those in prison. The rate of participation is generally affected by the age of the population, level of engagement with tertiary education, child rearing responsibility, etc. Low participation rates may also be a sign of discouraged job seekers at times of economic downturn. The table below shows the overall rate, by age groups, for females aged 20 to 54, and for Indigenous persons. The following sections take a more detailed look at each of these figures compared to the state and national benchmarks.

Table 5.3: Labour force participation rate by age, sex and Indigenous status

	Total (15 yr+)	15-24 year olds	25-55 year olds	55-64 year olds	65+ year olds	Female 20-54 year olds	Indigenous (15 yr+)
Moree Plains	61.8	59.1	73.7	57.7	20.4	65.8	43.2
Narrabri	61.3	59.2	78.4	61.3	14.9	70.2	47.0
Narromine	59.8	57.4	77.8	57.8	17.6	69.7	56.9
Warren	64.1	52.0	80.0	65.1	26.6	69.2	45.6
Dalby	62.0	71.4	76.1	61.8	10.0	67.0	54.0
Millmerran	62.3	67.6	77.6	57.4	18.6	67.1	56.6
Balance NSW	56.0	62.1	76.6	49.3	8.0	70.7	DNA
Balance QLD	60.0	67.3	76.6	52.3	9.0	70.6	DNA
NSW	58.9	59.8	76.6	53.7	8.5	70.2	51.2
QLD	61.8	67.3	77.8	54.2	8.6	71.9	56.2
Australia	60.4	62.5	77.5	54.8	8.4	71.3	51.2

Source: ABS (2006) Census of Population and Housing

5.5.1. General Labour Force Participation

The general labour force participation rate includes those aged 15 and over. The cotton communities all appear to be relatively on par with the labour force participation rates for the state and national benchmarks. All towns, except Narromine, show general labour force participation rates above the national average. While Narromine falls below the national benchmark of 60.4%, it is only slightly below with a value of 59.8%. It also interesting that all of the cotton towns are higher than Balance NSW at 56.0%.



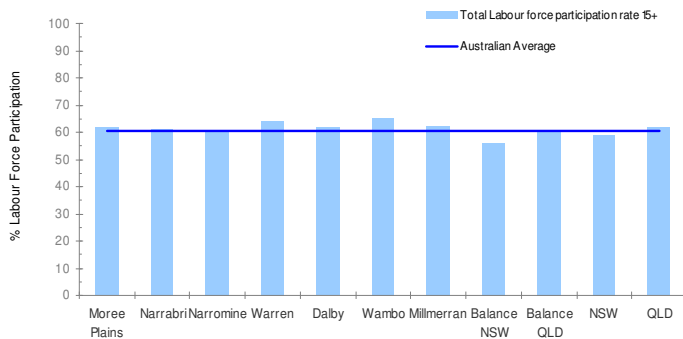


Figure 5.7: Labour force participation rate for 15 + year olds
Source: ABS (2006) Census of Population and Housing

5.5.2. Female Labour Force Participation

Again, labour force participation refers to those who are ‘in’ the workforce – those employed or underemployed and actively looking for work. Females who are studying full time or engaged solely in home duties would be considered ‘out’ of the workforce. The female labour force participation rates for the cotton communities are slightly below the national benchmark of 71.3%. Narrabri reports the highest rate of 70.2%, which matches the NSW rate. Moree Plains reports the lowest rate of the cotton towns at 65.8%.

The relatively low female participation rate may be due to a combination of factors including nature of work availability, and lower cost of living in rural areas and reduced imperative to work compared with metropolitan areas.

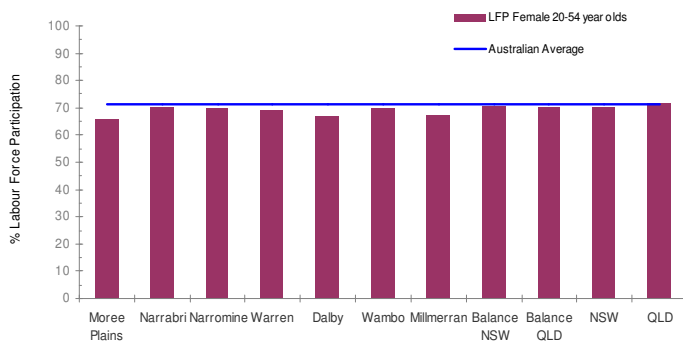


Figure 5.8: Labour Force Participation rate for Females aged 20 – 54
Source: ABS (2006) Census of Population and Housing

5.5.3. Indigenous Labour Force Participation

There appear to be some interesting differences between the cotton communities with regards to the labour force participation rates for Indigenous persons. Narromine, Dalby, Wambo and Millmerran report values higher than the national benchmark of 51.2%, while Narrabri, Warren and Moree Plains are well below that average. The rates appear generally higher in the Queensland cotton communities and QLD. It



would be interesting to further explore factors affecting the marked difference between Indigenous labour force participation in selected QLD communities and those in NSW (except Narromine). Data was unavailable for Balance NSW and Balance QLD.

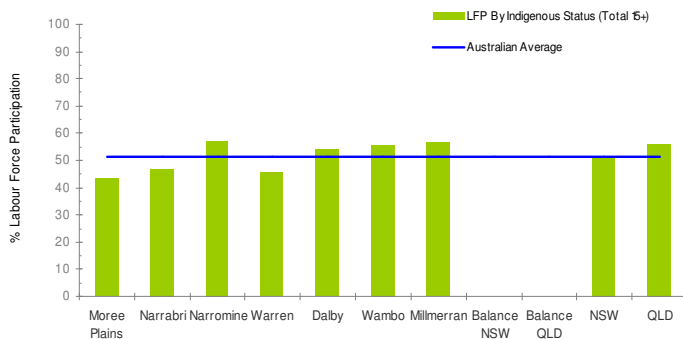


Figure 5.9: Labour force participation rate by Indigenous Status (Total 15yr+)
Source: ABS (2006) Census of Population and Housing, Indigenous Community Profiles

5.5.4. Youth Labour Force Participation

There again appears to be a difference between the states when it comes to youth labour force participation rates, as the NSW cotton communities (plus Balance and state) all fall below the national average of 62.5% while the QLD communities (plus Balance and state) are all above it.

Dalby returned the highest rate of 71.4%, with Warren reporting the lowest rate of 52.0%. This may be related to the disparity between Indigenous participation in these areas noted earlier, or other factors that need to be explored further.

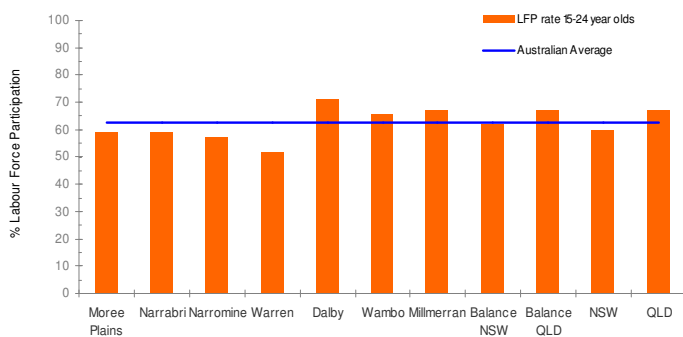


Figure 5.10: Labour force participation rate for 15 – 24 year olds
Source: ABS (2006) Census of Population and Housing

5.5.5. Labour Force Participation 65+yrs

The labour force participation rate for those aged 65 and over is an interesting measure to examine and track. When we compare the cotton communities with the state and national benchmarks, we see that





their participation rate is significantly higher – much higher than even the Balance NSW and Balance QLD figures. For example Warren reports a rate of 26.6%, which is over three times that of the NSW rate of 8.5%.

This indicates that seniors, those over 65, are actively working or looking for work, and that older people are either choosing to or needing to prolong their retirement. This is likely to be related to the operation and management of farms and related agricultural businesses by older owners or managers, and may illustrate the difficulties farmers and related workers have in planning for the succession of their business to a younger generation.

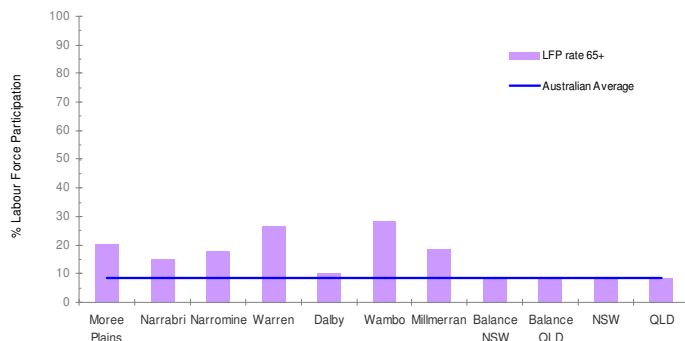


Figure 5.11: Labour force participation rate for 65+ year olds
Source: ABS (2006) Census of Population and Housing

5.6. Shift-Share Analysis

The shift-share analysis benchmarks the performance of the cotton communities against the economy of state from 1981-2006. In other words, if the economies of the cotton communities had kept pace with the state growth, how many jobs would there be now? The figure below shows the shift-share analysis for the NSW cotton communities. The ‘State Effects’ (blue bars) is the number of jobs that would have been added to the local economy if it had kept pace with NSW between 1981-2006. The ‘Local Effects’ (green bars) report the number of jobs that have been created or lost in the local economy between 1981-2006. Finally, ‘Total Change’ (orange bars) shows the difference between the two values – to give a true reflection of the change that has occurred if it had kept pace with NSW.

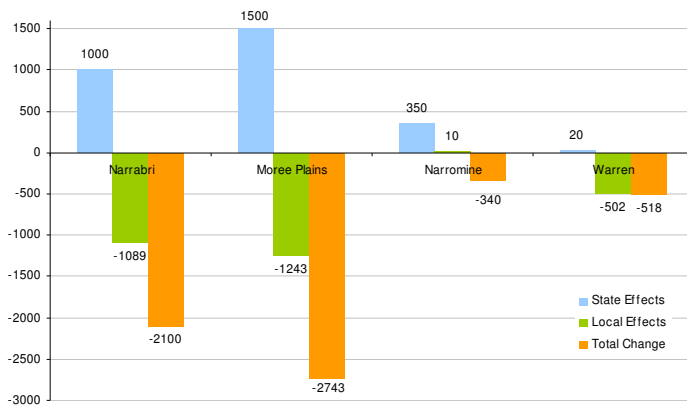


Figure 5.12: Cumulative Shift-Share Analysis, NSW 1981-2006
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.7. General Unemployment

The unemployment rate is the proportion of the total labour force that is not in paid employment and actively seeking work. The unemployment rate for the selected NSW communities - including Balance and state averages - is above the national average of 5.2%. Conversely, the unemployment rate in the Queensland communities, including Balance and the state average, is below the national rate.

The unemployment rate in Narrabri was the highest of the cotton communities at 7.1%, however this was on par with the Balance NSW rate of 7.0%. Given data reported here, this is likely to be related to a higher level of non-Indigenous unemployment including youth and female unemployment.

This may indicate that the benefits of agricultural production and related activity may not be distributed evenly across various segments of the population, and may also reflect the differential impacts of drought or other localised factors.

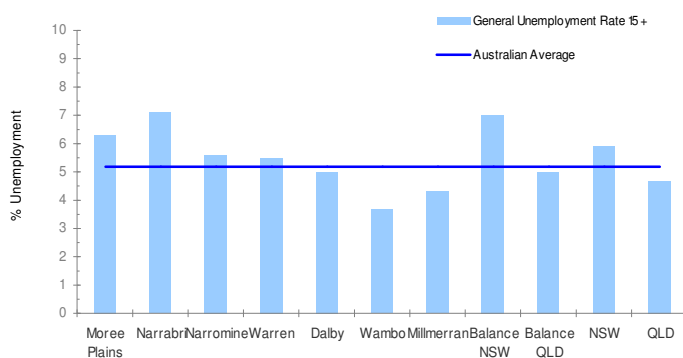


Figure 5.13: General Unemployment Rate for 15 – 64 year olds
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles



5.7.1. Female Unemployment

At the time of the 2006 census, the national female unemployment rate for those aged 15 and over was 5.3%. The NSW communities and their benchmarks had a slightly higher rate of female unemployment, except for Warren - which was below the national average at 4.9%. Again, Narrabri was significantly higher than the other towns with a rate of 7.6%. In comparison, the Queensland cotton communities have slightly lower rates of female unemployment than the QLD state average, which is also below the national average. Wambo has the lowest rate of female unemployment at 4.3%.

The factors behind these differences warrant further investigation.

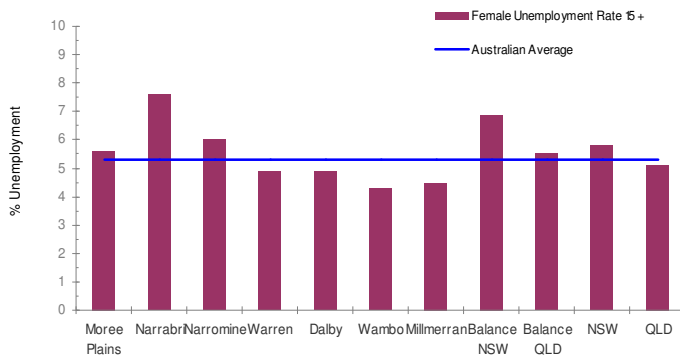


Figure 5.14: Female Unemployment Rate (15 +)
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

5.7.2. Indigenous Unemployment

There are some interesting differences between the cotton communities and the level of Indigenous unemployment reported. Millmerran reports the lowest rate of Indigenous unemployment at 0%, while Moree Plains is the highest with 27.1%. Moree Plains, Narrabri, Warren and Dalby are all significantly higher than the national average of 15.6 – though the NSW average is also higher at a rate of 19.3%. It is important to note that the overall adult Indigenous population in Millmerran (n=62 persons) is very low compared to the other communities. Please note there is no data available for Balance NSW and Balance QLD.

It is interesting that Indigenous unemployment was lower than the NSW State average in Narromine, though it was higher for other demographic groups as shown earlier.

It is important to note that Indigenous unemployment was around 3 times higher than the NSW and Queensland averages for general unemployment. The differentials are much greater in Moree and Dalby (4.5 times the local non-Indigenous rate), and Warren (4 times higher), but lower in Narromine (2.3 times). Higher rates of unemployment for Indigenous people in cotton communities (apart from Narromine) may in part reflect the loss of historical employment in lower skilled labouring jobs (e.g. cotton chipping), which has declined due to technological change and the introduction of GM cotton.

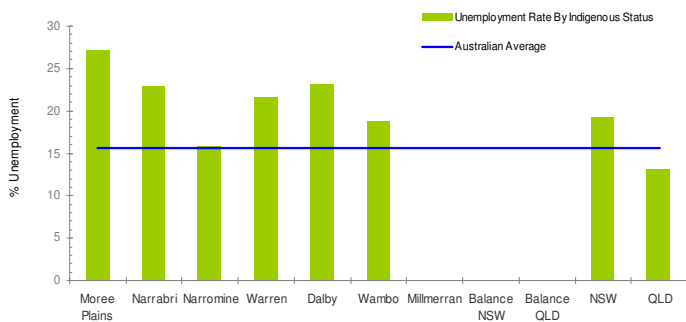


Figure 5.15: Unemployment Rate by Indigenous Status
 Source: ABS (2006) Census of Population and Housing, Indigenous Community Profiles

5.7.3. Youth Unemployment

The unemployment rate for young people aged between 15 and 24 again appears to show similarities between the towns in each state. The NSW towns all report values higher than the national average of 10.2%, while the Queensland towns are both below the national average. However, both Balance NSW and NSW are also above the national average yet Balance QLD and QLD are below it. While the NSW towns are above the national average, they are all quite similar to the Balance NSW value of 13.5%. Narromine has the highest youth unemployment rate at 15.3%, while Wambo reports the lowest at 4.3%.

Many of the stakeholders across all the cotton communities reported that they felt there were few opportunities for employment for young people, especially those who may have few skills and require training. Opportunities for increased entry-level jobs and structured traineeships are important in this regard.

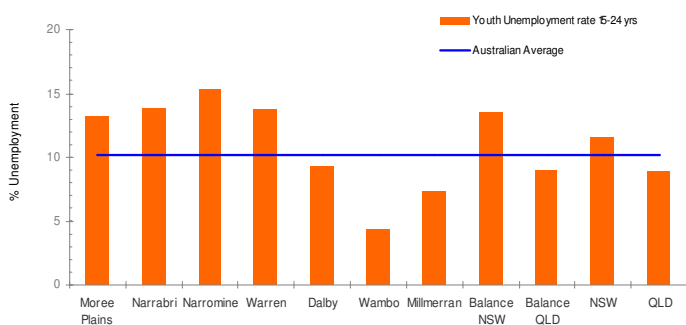


Figure 5.16: Youth unemployment rate (15-24 year olds)
 Source: ABS (2006) Census of Population and Housing

5.8. Jobless Families

Data for ‘jobless families’ was released by PHIDU in 2007 based on 2001 ABS Census data. These values are based on Statistical Local Areas (SLAs). The term ‘jobless family’ is used to describe families without an employed parent. Children living without an employed parent, or children in jobless households, are seen as being at risk of socioeconomic disadvantage. These children may be at higher risk of experiencing



financial hardship, may not have a role model of employment to follow, and in turn the joblessness of the parent(s) may mean that they are more likely to experience welfare dependency in the long term.⁴⁵ However, it is important to note that a jobless parent may be staying at home to care for children or studying.

The Australian average of jobless families with children under the age of 15 is 17.4%. Moree Plains, Narrabri and Narromine report rates higher than this average, however these rates do not appear to be out of step with either Balance NSW or Balance Queensland. Warren and Millmerran are well below the national average with rates of 14.2% and 9.1% respectively.

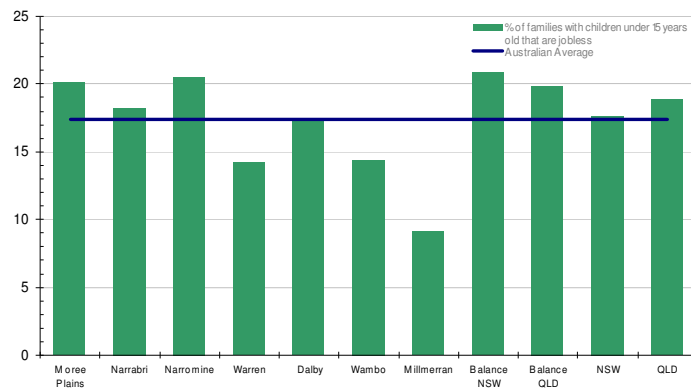


Figure 5.17: Proportion of Families with Children under 15 yrs old who are Jobless
Source: PHIDU (2007) Population Health Profiles for Divisions of General Practice: Supplement (Release 2: March 2007)

5.9. Job Containment

This figure shows the number of people thought to be crossing LGA boundaries for work. This is based on a calculation of census data that describes the number of residents employed in each LGA, with data on the number of people who's place of work is within each LGA. We see that there is net out-commuting for each of the cotton areas, except for Millmerran where there is net in-commuting. The high level of commuting out for Jondaryan is due to its close proximity to Toowoomba, while the high level in Narromine is due its proximity to Dubbo.

⁴⁵ Dawkins, P. and Kelly, P. (2003) *Hard heads, soft hearts: a new reform agenda for Australia*, Allen and Unwin.

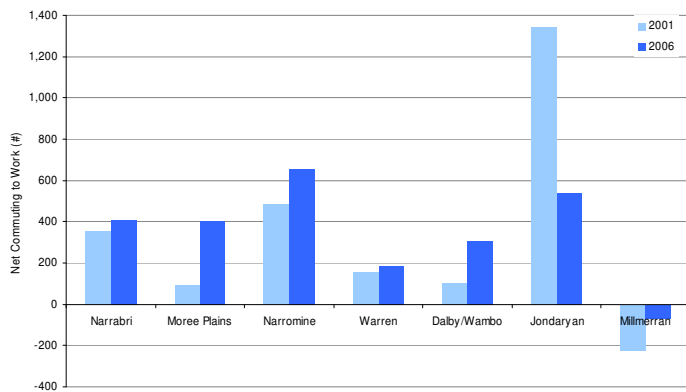


Figure 5.18: Net Commuting to Work
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.10. Median Household Income

This graph shows the median weekly household income for each cotton community benchmarked against the Australia median of \$1,027. Household income is the sum of the income received through wages, investments or pensions and benefits for all adults in the household.

Across the cotton communities, the median household income was lower or much lower than the Australian median. Whilst the median household incomes for NSW and Queensland were equivalent to the Australian median, median household incomes outside of the metropolitan areas were lower or in the case of Balance NSW, significantly lower.

Moree Plains and Dalby had the highest median household incomes, whilst Millmerran and Narrabri had median household incomes that were more than 20% lower than the Australian benchmark. Narromine and Warren had much lower median household incomes than the NSW and Australia medians at \$725 and \$696 respectively. This is likely to be related to factors including older age structure, higher levels of welfare dependence including high rates of unemployment, as well as a lower participation women in the workforce noted earlier.

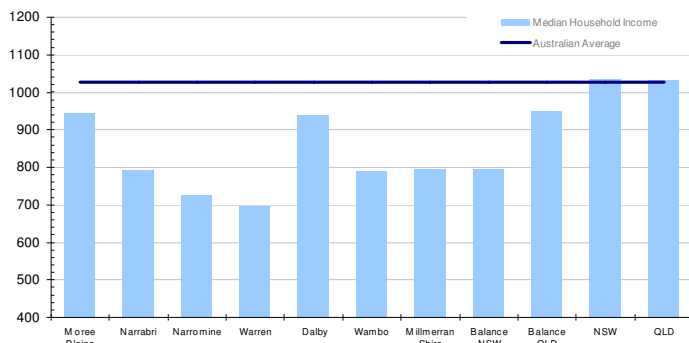


Figure 5.19 Median Household Income
Source: ABS (2006) Census of Population and Housing





5.11. Composition of Household Income

Total household income is the combination of money from wages and salary, superannuation/annuity, government benefits, investments, income from a business or other sources. The composition of household income is shown in the table and figures below, with NSW and QLD communities separated and compared against the relevant state benchmark.

New South Wales

The composition of household income varies both against the state averages, as well as amongst the cotton communities. All of the NSW cotton areas report a higher proportion of household income derived from owning unincorporated businesses – likely due to a higher proportion of locally owned enterprises and farms – than the state benchmark. Narromine has the highest proportion of its income from this area at 16%, double that of Moree at 8%. The general above average dependence on Government cash benefits should also be noted, possibly related to an older age structure (pensioners) or to welfare dependent populations within the community.

Table 5.4: Composition of Household Income, NSW

Income Category	Narrabri		Moree		Narromine		Warren		NSW	
Wages and salary (\$m)	163.30	68%	178.70	67%	67.00	60%	37.50	63%	99,869.20	72%
Own unincorporated business (\$m)	23.00	10%	22.50	8%	17.70	16%	9.10	15%	8,733.10	6%
Investment (\$m)	18.00	8%	29.10	11%	8.60	8%	5.90	10%	12,121.00	9%
Superannuation and annuity (\$m)	3.00	1%	1.70	1%	1.30	1%	0.40	1%	2,962.30	2%
Government cash benefits (\$m)	31.30	13%	34.30	13%	16.60	15%	6.90	12%	13,919.00	10%
Other income (\$m)	0.40	0%	0.80	0%	0.20	0%	0.10	0%	1,203.10	1%
Total income from all sources (\$m)	238.90	100%	267.10	100%	111.50	100%	59.9	100%	138,807.70	100%
Net tax (\$m)	45.10	19%	54.80	21%	18.60	17%	12.50	21%	31,388.50	23%
Average Weekly Household Disposable Income (\$)	732.00		747.00		720.00		754		895.00	

Source: Centre for Agricultural and Regional Economics (CARE) 2008

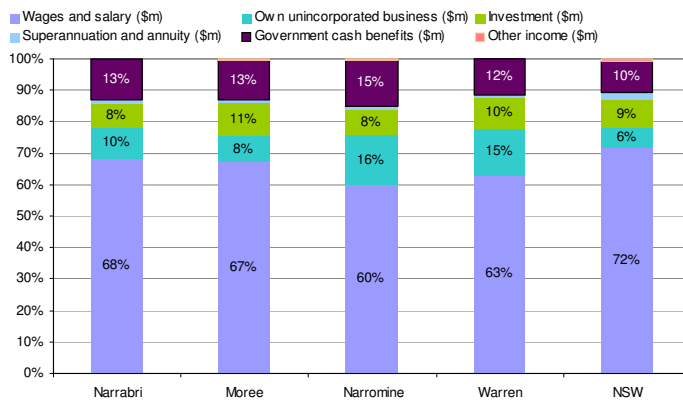


Figure 5.20: Composition of Household Income, NSW
Source: Centre for Agricultural and Regional Economics (CARE) 2008

Queensland

The cotton areas in Queensland appear to have a more similar profile to their state benchmark compared to the NSW towns. Wambo shows a slightly higher proportion of income from the ownership of unincorporated businesses and government benefits compared to the other areas and the state. The higher proportion of Government cash benefits in QLD (13%) compared with NSW (10%) is likely to be a reflection of the number of retirees and pensioners living in QLD.

Table 5.5: Composition of Household Income, QLD

Income Category	Dalby		Wambo		Jondaryan		QLD	
Wages and salary (\$m)	115.10	71%	50.60	65%	134.20	71%	45,882	71%
Own unincorporated business (\$m)	9.90	6%	7.70	10%	12.60	7%	4,527	7%
Investment (\$m)	13.20	8%	6.20	8%	11.30	6%	4,389	7%
Superannuation and annuity (\$m)	1.70	1%	0.80	1%	4.20	2%	1,344	2%
Government cash benefits (\$m)	21.90	13%	12.60	16%	25.60	14%	8,214	13%
Other income (\$m)	0.50	0%	0.30	0%	0.09	0%	409	1%
Total income from all sources (\$m)	162.30	100%	78.20	100%	188.80	100%	64,765	100%
Net tax (\$m)	29.00	18%	12.70	16%	32.60	17%	12,432	19%
Average Weekly Household Disposable Income (\$)	731.00		692.00		745.00		772.00	

Source: Centre for Agricultural and Regional Economics (CARE) 2008



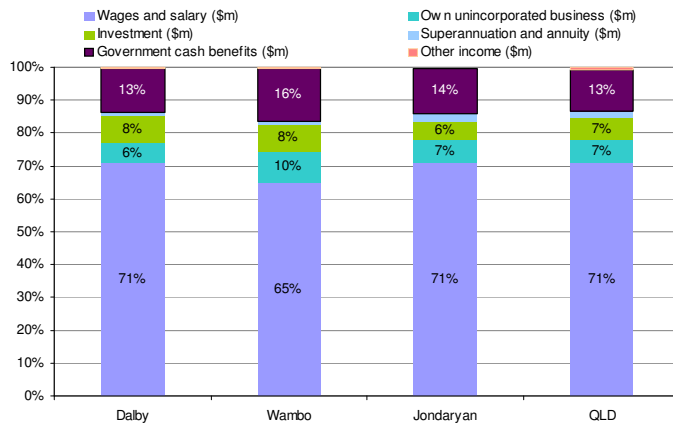


Figure 5.21: Composition of Household Income, QLD
Source: Centre for Agricultural and Regional Economics (CARE) 2008

The average weekly household disposable income is shown below for the cotton communities, compared with the NSW and QLD averages. We see that all of the towns report somewhat similar levels. When compared to their respective state benchmark, we see that the NSW towns are well below the state average and the QLD towns are closer to that state average, as the QLD average is 86% that of NSW.

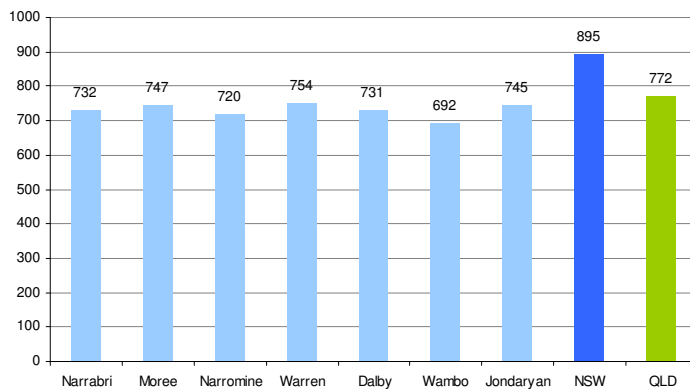


Figure 5.22: Average Weekly Household Disposable Income (\$)
Source: Centre for Agricultural and Regional Economics (CARE) 2008

5.12. Traineeships & Apprenticeships NSW

The rate of apprenticeship and traineeship commencements is regarded as an indicator of business wellbeing and confidence, as this is a significant investment in the future.

The data available on traineeships and apprenticeships is managed by the states. Thus, there are differences in the data available for the different programs as well as their reporting schedules between NSW and QLD. Given that making comparisons between the states is difficult, we look at each state individually. Data for traineeships and apprenticeships in NSW is available by request through the NSW Department of Education and Training.

Moree Plains had the highest rate per 1,000 adult population at 16.7, and was the only town above the NSW state average of 14.1. Narromine had the lowest at 5.8. Moree Plains and Narrabri had higher rate of



traineeship and apprenticeship commencement per 1,000 adult population compared to Narromine and Warren. It is not clear whether differences in apprenticeship rates are related to greater job opportunities, commitment of local businesses to training, or other factors.

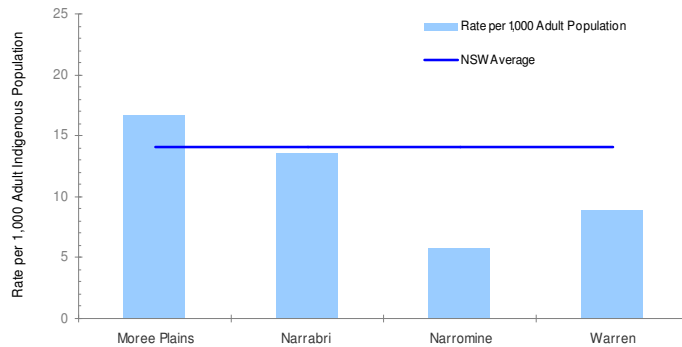


Figure 5.23: Rate of Total Trainee/Apprenticeships per 1,000 Adult Population (15+) NSW
Source: NSW Department of Education and Training (2006), ABS Census (2006)

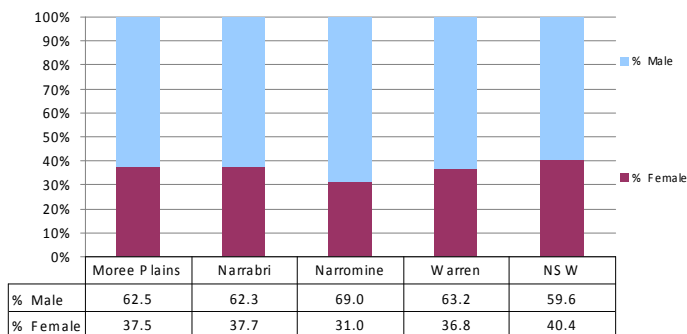


Figure 5.24: NSW Traineeships & Apprenticeships, % by Sex
Source: NSW Department of Education and Training (2006), ABS Census (2006)

5.12.1. Traineeships & Apprenticeships: NSW By Sex

All of the NSW cotton communities have a more disproportional uptake of traineeships and apprenticeships by sex than the NSW average of 40.4% female and 59.6% male. Narromine had an especially disproportionate rate at 31.0% female and 69.0% male.

5.12.2. Traineeships & Apprenticeships: NSW By Indigenous Status

This graph shows the rate of traineeships and apprenticeships undertaken in 2006 by Indigenous adults aged 15 and over, per 1,000 adult Indigenous population. Narrabri and Moree Plains had the highest rates with 22.6 and 19.6 respectively. This finding is perhaps not surprising for Moree Plains given that it has the highest proportion of Indigenous population among the cotton communities. However, the rate of uptake of traineeships and apprenticeships in Narrabri (22.6) is significantly higher than the proportion of Indigenous population in 2006 – 9.4%, which indicates positive action in this area.



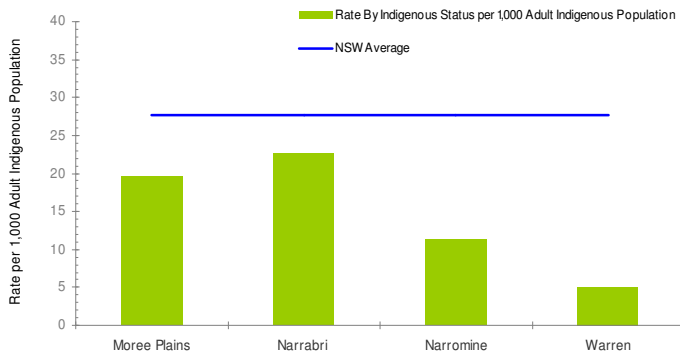


Figure 5.25: NSW Traineeships & Apprenticeships, Rate per 1,000 Adult Indigenous Population (15+)
Source: NSW Department of Education and Training (2006), ABS Census (2006)

5.13. Traineeships & Apprenticeships QLD

Data for traineeships and apprenticeships for QLD is available from the Queensland Department of Education, Training and the Arts by postcode. For this study, we compared the number of new commencements of traineeships and apprenticeships in 2006 in the postcodes of Dalby (4405), Cecil Plains (4407), and Millmerran (4357). We used a sum of the traineeships and apprenticeships commenced for Cecil Plains and Millmerran postcode areas and the 2006 ABS Census population values by LGA to calculate a rate per 1,000 adult population. Thus, it is important to note that there is some variation that may exist, as postcode boundaries may not match LGA boundaries exactly. As the graph shows, Dalby had a much higher rate of commencement per 1,000 adults than Millmerran and Cecil Plains, compared to the Queensland average. Again, it would be interesting to further explore the reason for this difference.

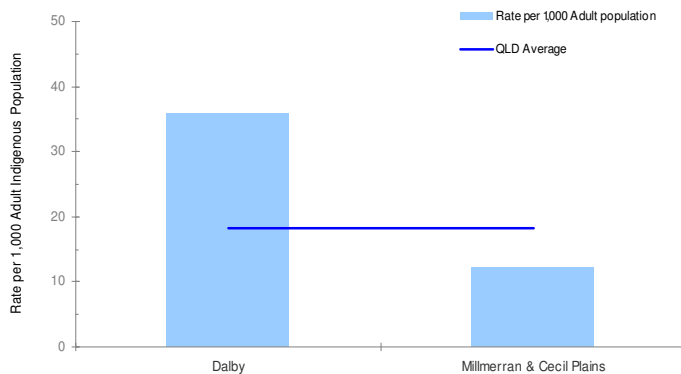


Figure 5.26: QLD Traineeships & Apprenticeships, Rate of New Commencements in 2006
Source: QLD Department of Education, Training and the Arts (DETA) 2006, ABS Census (2006)

5.13.1. Traineeships & Apprenticeships QLD: By Sex

Despite the large difference in total number of new commencements for Dalby and the Millmerran/Cecil Plains area ($n=267$ v $n=29$), there is a distinct difference between the proportions of new commencements by gender. Millmerran and Cecil Plains report a much higher proportion of new



commencements by females in 2006 at 48.3% than Dalby and the state average. Dalby is below the Queensland average for female new commencements with 35.2%.

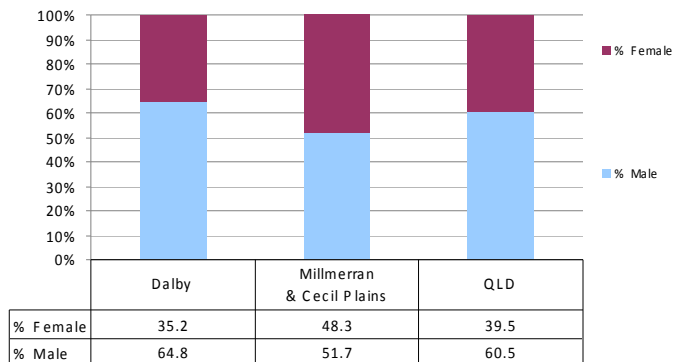


Figure 5.27: QLD Traineeships & Apprenticeships, % of New Commencements by Sex (2006)
Source: QLD Department of Education, Training and the Arts (DETA) 2006

5.13.2. Traineeships & Apprenticeships QLD: By Indigenous Status

The rate of new commencements of traineeship and apprenticeships by Indigenous students per 1,000 adult Indigenous population appears to be quite similar to the rate of new commencements across the entire population. This graph shows that the Indigenous population in the Dalby area has a much higher rate of new commencement than the Indigenous population in the Millmerran & Cecil Plains area and also the state average. This difference may be largely explained by the higher proportion of Indigenous people in Dalby compared with the Millmerran/Cecil Plains area, though the high rate of apprenticeships is still positive for this area.

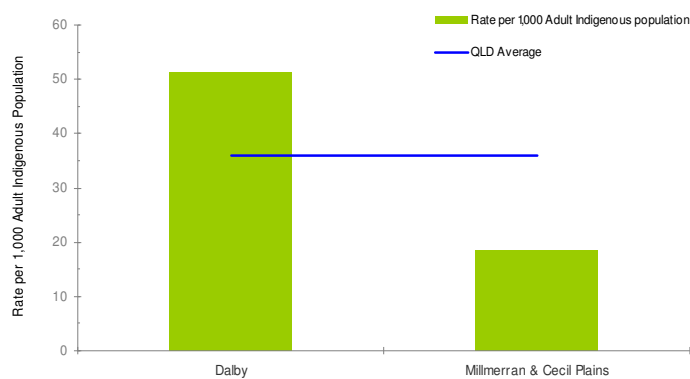


Figure 5.28: QLD Traineeships & Apprenticeships, Rate of New Commencements by Indigenous Status per 1,000 Adult Indigenous Population
Source: QLD Department of Education, Training and the Arts (DETA) 2006, ABS Census (2006)



6. Environmental Indicators

Our environment is made up of both the ‘built’ and ‘natural’ environments. The built environment includes homes, places of work and places of recreation and play – that are made by humans. The natural environment refers to the natural features and physical layout of the area in which a community is located. Some of these features may include water resources (rivers, wetlands, oceans), geologic resources (minerals, opals, natural gas) and geographic features (forests, plains, coastlines). This information can include areas where certain species are found, key migratory routes of certain birds and animals and natural heritage landmarks – for example, The Warrumbungles or the Macquarie Marshes.

This sort of information is useful and important for understanding the wellbeing of a community, as these features and attributes may contribute to a community’s local identity or way of life. For some areas this may be tied to agriculture, while for others it may be related to recreational opportunities such as bushwalking, fishing or shooting. Yet still for others these attributes may be a source of economic growth due to agriculture, mining or tourism. Information about these features will provide insight into the relationship community members have with their natural environment. Aspects of the natural environment may relate to why some people chose to live where they do, or are able to live where they do based on the resources that are available to them. Natural features often invoke local pride, attract outside attention and may stimulate economic activity. The relationship that the community has with its environment, how natural resources and features are used and valued, is likely to have an impact on planning and development strategies.

Due to limitations of the scope of this study, our review is limited to indicators of the wellbeing of the built environment. Further study of the connection between the natural environment and overall community wellbeing is recommended.

6.1. Built Environment

With regards to the built environment, we choose to focus our indicators on the wellbeing of housing. Thus, indicators look at the tenure and composition of properties, as well as the costs to rent and purchase homes in each area when compared with the state and national benchmarks.

During December 2007, we conducted a survey of real estate agents across the cotton communities. The survey was conducted over the phone and lasted approximately 10-15 minutes. Many agents tended to specialise in residential rent and/or sales, farm sales, or sales and lease of commercial premises. Thus, where possible more than one real estate agent was surveyed as part of this task.

Moree

The real estate market typically works in cycles in Moree, with the spring period and into the new year - as the best time. The impact of the drought on farming and employment has resulted in a downturn in the property market, with the average home purchase price going down considerably in the last three months



by at least 10%. Many of those who are looking for properties are retirees and others moving off of country properties and into town.⁴⁶ The median purchase price for a home in town is \$163k and out of town \$130k.⁴⁷

The rental market has been similar to sales in that there are quite a few long-term vacancies. The reduction in seasonal cotton labourers has had an impact on the rental market in that there is no longer high turn over among rental properties.

Narrabri

At the time of our real estate survey in late 2007, Narrabri was thought to be experiencing a period of tight rental availability with very few long-term rentals available currently. This was attributed to the influx of workers related to the gas and mining enterprises located within Narrabri Shire, although one agent noted that Narrabri has historically had low levels of renters. Ray White Real Estate provided a brief breakdown of rental costs: 1 bedroom flat in town \$150 or less, a 2 bedroom dwelling in town for between \$150 and \$200, a three bedroom dwelling for between \$200 and \$270, and a four bedroom dwelling for between \$250 and \$335.

Approximately 20%-30% of dwellings available for rent were available for under \$150 per week and were mainly 1-2 bedroom flats or units. Rental costs were said to have increased slightly over the past year, which was attributed to landlords passing on increased costs associated with interest rate increases and general inflation.

House prices in Narrabri have remained stagnant during the past year, but have increased slightly at approximately 5%-7% per year during the past five years. The increase in house prices was attributed to the broad base of industry and employment in the area and largely driven by those having employment in Narrabri, and not the investors and other 'tree changers' that other coastal and country areas may have. The broad base of industries in the area is thought to contribute to the more stable market compared to some surrounding areas.⁴⁸ Those selling appear to be a mix of those moving out of town for employment or the elderly downsizing into smaller more manageable properties.

Narrromine

W. Burke & Company currently manages 220 rental properties on behalf of their clients, which accounts for approximately a third of all rental properties in the Narrromine Shire as there were 680 rental dwellings listed in the 2006 ABS Census. Narrromine was thought to be experiencing a tight rental market with no vacant rentals available at time of survey. Despite the ABS Census stating that the median rental price in the Narrromine Shire was \$110, agents reported that they had nothing below this price. This indicates that Narrromine is experiencing an increase in rentals in the last few years. The cheapest rental properties currently available were 2 bedroom flats renting for approximately \$120-\$130 a week.

⁴⁶ Telephone interview with Harris Estate Agents, 04 December 2007.

⁴⁷ Telephone interview with Ray White Moree, 05 December 2007.

⁴⁸ Telephone interview with Cramsie McRae Thomas, 04 December 2007.





Property sales reported a similar trend of increase as rentals. Purchasers range from first homebuyers to older people who are moving off of country properties and into town.⁴⁹

Warren

Demand for rental and purchase properties is quite low in Warren at the moment. Many 1 and 2 bedroom units that were built to house workers are sitting vacant due to the lack of work resulting from the drought and other impacts. Prices for rental units range from \$65 to \$90 per week, with homes renting between \$110 and \$160 per week. Those looking for rental accommodation include younger and middle aged unemployed workers primarily from the area. The purchase price for homes range from \$47K to \$130K, with the average price around \$110K, which has largely remained unchanged in the past year. The downturn has happened within the last 5 years, with many people wanting to sell their properties but have not been able to do so. Those who are purchasing homes in the area include retirees from outside the area, who are looking for a rural lifestyle for an affordable price. Those who are moving away include those moving outside of the area in search of work.⁵⁰

Dalby

Unlike some of the other cotton communities, the real estate market in Dalby is doing very well with purchase prices going up significantly in the past year thought to be largely the result of the mining boom and new industries moving into the area. Home prices have increased by 50K to 200K in just over 4 years. The majority of new homeowners are those moving to the area due to the new employment opportunities. Many investors who bought into the area 6 years ago are now reaping the benefits by developing and selling their land.⁵¹

The rental market is viewed as tight at a 1% vacancy rate, with few 'good' properties available. The costs of a rental property have also gone up significantly in the past five years, with all properties renting for between \$160 and 250 per week. Cotton is not viewed to have a large impact on the market, with the boom in the resources sector as the real factor.⁵²

Cecil Plains

At the time that this study was conducted, we were unable to make contact with any real estate agents dealing with properties in the Cecil Plains area.

⁴⁹ Telephone interview with W. Burke & Company, 04 December 2007.

⁵⁰ Telephone interview with Town & Country Real Estate, 04 December 2007.

⁵¹ Telephone interview with GDL Real Estate Dalby, 05 December 2007.

⁵² Telephone interview with Fitzsimmons Real Estate Dalby, 05 December 2007.



6.1.1. Tenure: % Owned & Being Purchased

In 2006, the proportion of occupied private dwellings owned and being purchased in Australia was 68.1%. Compared with this national average, the cotton communities have a relatively lower proportion of dwellings owned and being purchased – except Wambo which is slightly above. Of the NSW communities, Moree Plains reports the lowest proportion of homes owned and being purchased at 56.0%. Narromine has the highest rate at 68.0%, still slightly below the Balance NSW rate of 69.3%.

The lower rate of homes owned and being purchased in the cotton communities may be due to the exodus of working age population for coastal or metropolitan areas, the un-affordability to purchase property on local wages, or reluctance by residents to purchase property in these areas.

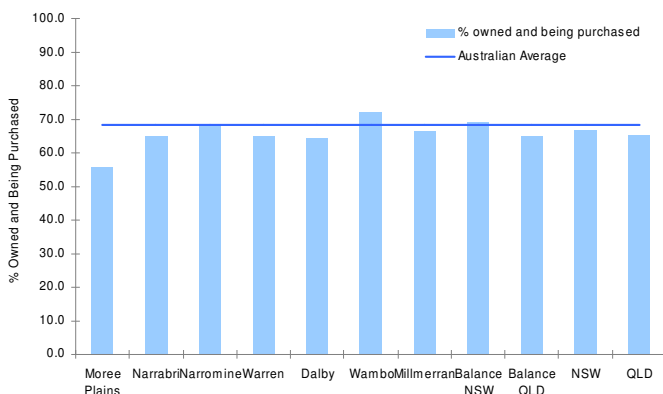


Figure 6.1: % Owned and Being Purchased of Total Occupied Private Dwellings
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

6.1.2. Tenure: % Being Purchased by Indigenous Status

The following graph illustrates the proportion of indigenous households purchasing property compared with the Australian rate of indigenous home purchase of 34.2%. Each of the cotton communities except for Narromine report a lower rate compared to the national average. Moree Plains and Millmerran report the lowest rates of homes being purchased by Indigenous households at 22.5% and 19.5% respectively. On the other hand, in Narromine and Wambo 46.5% and 57.1% of Indigenous households either own or are purchasing property – a figure well above the state and national benchmarks. This high level in Wambo is also likely due to the low numbers of residents from an Indigenous background.

Note that there is no data available for this indicator for Balance NSW and Balance QLD.



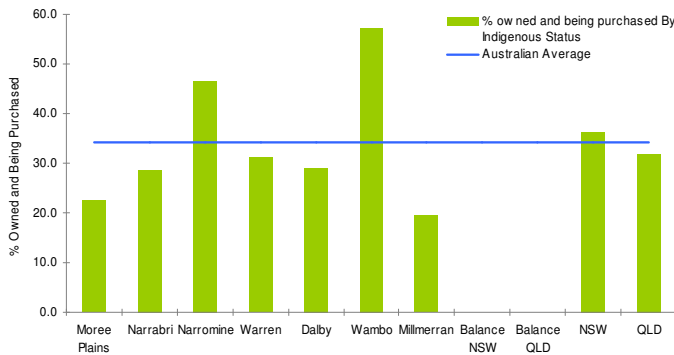


Figure 6.2: % Being Purchased by Indigenous Status
Source: ABS (2006) Census of Population and Housing, Indigenous Community Profiles

6.1.3. Tenure: % Social Housing

Social housing is housing that is funded by the state and Commonwealth governments. Social housing properties are typically managed by state and Aboriginal housing departments, community housing organisations, and/or local Land Councils. Across Australia, the average proportion of social housing is 5.0% of properties. Each of the NSW cotton communities report higher proportions of social housing than the national average, with Moree Plains at the highest with 9.9%. On the other hand, the Queensland communities are both well below the national average. Wambo and Millmerran have especially low rates. Again, it is interesting to point to the differences we see between cotton communities in the two states. The Queensland cotton communities and state benchmarks are below the national average, while the NSW communities and state benchmarks are both above the national average.

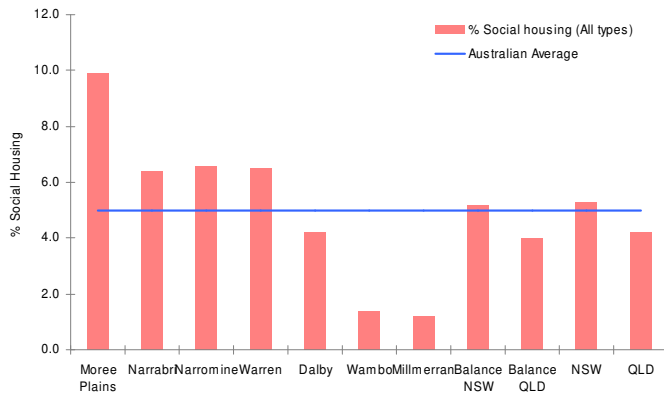


Figure 6.3: % of Social Housing
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

6.1.4. Composition: % of Total Dwellings that are Vacant

Vacant properties are those that are unoccupied. There may be a variety of reasons why a property may be vacant, such as it is a holiday property, rental or investment property currently without a tenant, uninhabitable due to maintenance or neglect, or perhaps the owners may have moved on but have yet to sell. The proportion of total dwellings in an area that are vacant can be an indicator of investment in the



area or possibly the ability of people to live and work in an area. In 2006, Dalby had the lowest rate of vacant dwellings at 9.7%, which is just below the national average of 9.9%. Both Warren and Millmerran report quite high rates of vacant properties with 19.9% and 18.5% respectively. Recent consultations in October 2007 with real estate agents managing properties in Warren confirm this finding. One agent managing properties in Warren stated that there are many vacant rental properties that used to be accommodation for seasonal cotton workers; now without the need for seasonal labour due to a variety of factors there is a high rate of vacant rental properties.

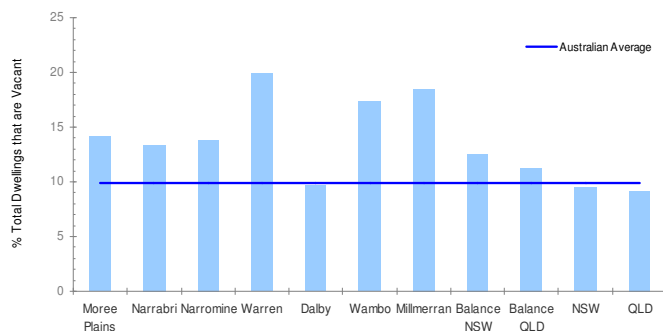


Figure 6.4: % of Total Dwellings that are Vacant
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

6.1.5. Cost: Median Weekly Rent

Data on weekly rental costs is available from the ABS. Median weekly rental cost indicates the point at which half of all rents are below the median price and half are above it. The median weekly rental cost across Australia at the time of the 2006 census was \$190. Each of the cotton communities report a median weekly rent cost well below the national and state benchmarks. Warren reports the lowest median weekly rental cost at \$88 and Dalby reports the highest at \$160.

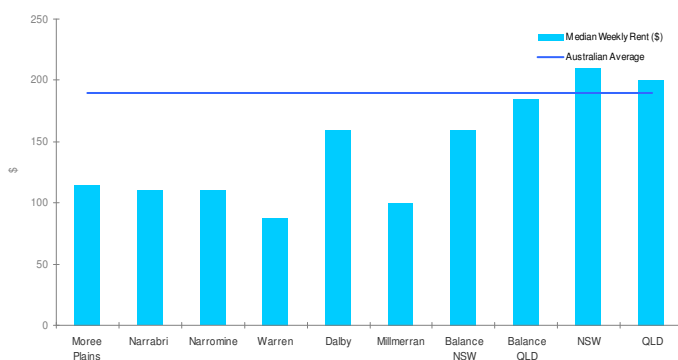


Figure 6.5: Median Weekly Rental Cost
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles





6.1.6. Cost: Median Monthly Mortgage Loan Repayments

Median monthly mortgage home loan repayments are also lower in the cotton communities compared to the state and national benchmarks. Moree Plains shows the highest median rate at \$1083 per month, while Millmerran is the lowest at \$745 per month.

These lower median monthly loan costs seen in the cotton communities are typically the result of historically lower house and land prices, lower demand for housing, lower wages, and an older population who may have already either fully paid or significantly paid off their home loan.

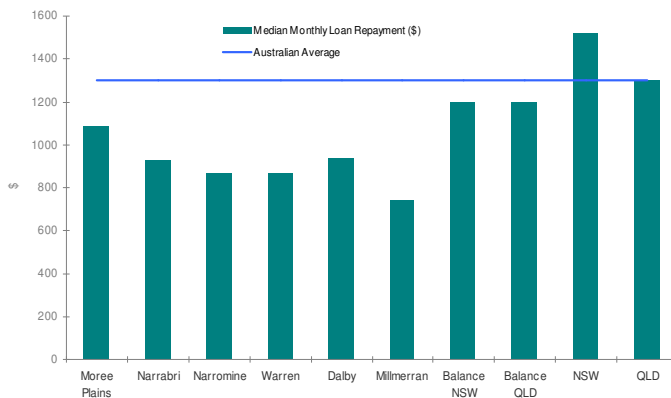


Figure 6.6: Median Monthly Mortgage Loan Repayment
Source: NSW Department of Housing (2006) North Central Plain data by SSD, September Quarter

6.1.7. Cost: Weekly Rent & Loan Repayments Compared

When the median weekly rental costs are compared with the median weekly mortgage home loan repayments, we see that Dalby appears to have a higher cost of rent versus the cost of home repayments compared with the other towns, while Millmerran appears to be the most affordable of the cotton towns in terms of relatively low median rates for rental cost and loan repayments.

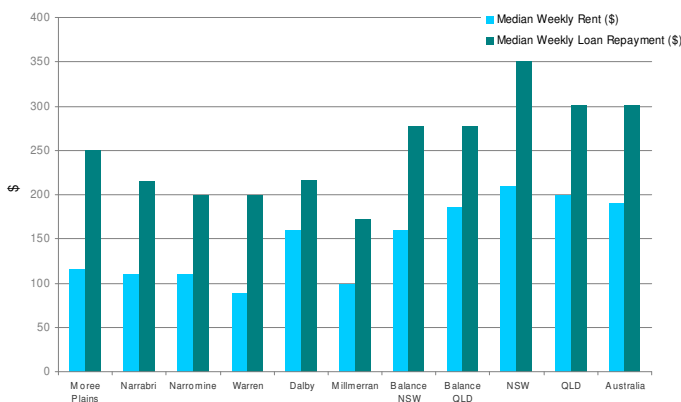


Figure 6.7: Median Weekly Rent & Loan Repayments Compared
Source: NSW Department of Housing (2006) North Central Plain data by SSD, September Quarter



6.2. Housing Affordability

Housing Stress for Low Income Households

Housing stress for low-income households, those below the 40th decile for income in their area, is the risk of after-housing poverty due to spending more than 30% of their income on housing costs (either rental or mortgage). ‘Extreme rental stress’ is defined as low-income households below the who pay more than 50% on rental costs.

The % of low-income households experiencing housing stress and extreme housing stress in the cotton communities is much lower compared to the NSW averages. Dalby and Moree Plains appear to have the highest rates of housing stress for low-income households, while Millmerran has the lowest rates. This is interesting as Millmerran also had the lowest proportion of social housing, thus indicating that even without much social housing – housing is quite affordable in Millmerran for low-income households.

Table 6.1: Low Income Households in Housing Stress

	# of Low Income Households	% of Low Income Households paying more than 30% of Income on Housing			% of Low Income Households paying more than 50% of Income on Housing		
		Rent	Purchase	Total	Rent	Purchase	Total
Moree Plains	1647	14.0	4.3	18.3	3.7	1.9	5.6
Narrabri	2022	13.1	6.3	19.3	2.4	2.5	4.9
Narromine	1064	9.4	5.2	14.6	1.6	2.1	3.7
Warren	494	9.3	8.5	17.8	1.2	2.4	3.6
Dalby	1267	14.2	5.7	19.9	3.4	1.9	5.3
Millmerran	482	6.0	4.6	10.6	1.5	1.9	3.3
NSW	811308	16.7	8.3	25.0	5.9	4.1	10.1

Source: ABS (2006) Census of Population and Housing, JSA (2007)

Housing Stress for Moderate Income Households

For moderate-income households, those households with an income between the 40th decile and 120% of median for their area, again there are much lower levels of housing stress (both rental and purchase) when compared with NSW. In Narromine and Warren there is no housing stress reported for moderate-income households who are renting. The highest levels of housing stress for moderate-income households appears to be in Moree Plains and Narrabri, and Millmerran showing 3.0% of moderate-income households spending more than 50% of their income on housing costs. For Millmerran, we can assume that some of those moderate-income households who are in housing stress are choosing to do so – as there is such correspondingly low housing stress among low-income households, indicating that more affordable housing options are available in the area.





Table 6.2: Moderate Income Households in Housing Stress

	# of Moderate Income Households	% of Medium Income Households paying more than 30% of Income on Housing			% of Medium Income Households paying more than 50% of Income on Housing		
		Rent	Purchase	Total	Rent	Purchase	Total
Moree Plains	1124	0.5	5.9	6.4	0.3	1.3	1.6
Narrabri	1121	0.3	6.2	6.5	0.3	1.9	2.1
Narromine	575	0.0	3.8	3.8	0.0	1.2	1.2
Warren	232	0.0	5.6	5.6	0.0	1.3	1.3
Dalby	942	0.3	4.8	5.1	0.3	0.4	0.7
Millmerran	305	1.0	2.0	3.0	1.0	2.0	3.0
NSW	501294	3.0	15.6	18.6	0.9	5.2	6.1

Source: ABS (2006) Census of Population and Housing, JSA (2007)



7. Social Indicators

Social indicators describe aspects of community wellbeing including the relative age of a population, change in population size, migration of individuals to the from an area, the composition of household types in a community, health behaviours, school enrolments, rates of chronic disease and premature death and crime. Tracking these indicators helps communities to better understand how well their communities are coping with change. For example, in a time of drought and economic downturn what is happening to the people and services in a community? Is the population shrinking or growing? Are health and crime indicators going up or down? While a direct correlation between a specific indicator and an external influence cannot be drawn, by looking at a range of indicators while at the same time taking into account the context, we can better understand how communities are changing and adapting to internal and external influences over time.

7.1. Median Age

Median age is the age at which half of the population is younger than and half of the population is older than. This measure refers to the relative age of the population generally. Thus, a higher median age would indicate an older population. Warren has the highest median age of the cotton communities at 40 years, which is equal to the Balance NSW median age.

Moree Plains and Dalby have the lowest median age at 34 years. With regards to the median age of Moree Plains, this is most likely a factor of the large Indigenous population and higher birth rates associated with Indigenous populations.

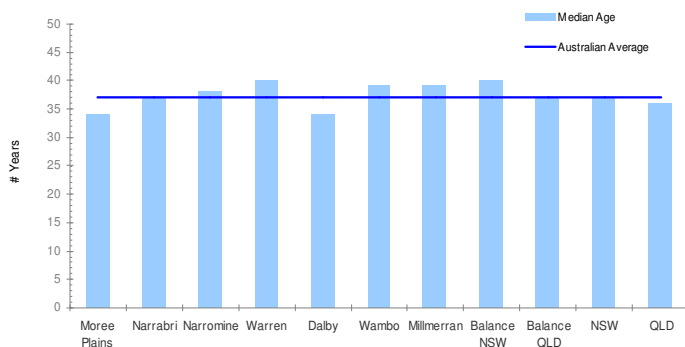


Figure 7.1: Median Age

Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

7.2. Indigenous Population

This graph shows the proportion of the population for each cotton community that is Indigenous. All of the cotton communities, except for Millmerran, report a much higher proportion of Indigenous population compared to the national and state benchmarks. The NSW communities have especially higher rates compared to the QLD towns.





Moree Plains and Narrabrine have the highest proportions of Indigenous members of the population at 19.4% and 15.8% respectively. Millmerran and Wambo had the lowest proportions at 2.7% each.

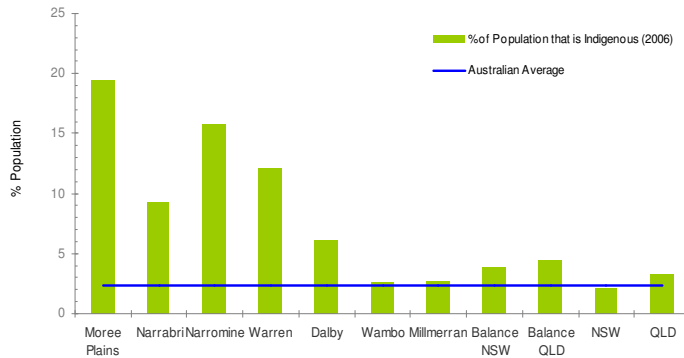


Figure 7.2: % of Population that is Indigenous
Source: ABS Census (2006) Basic Community Profiles, based on Place of Usual Residence

7.3. Total Population Change

The table below presents the total population of the cotton communities and benchmarks for the years 1991, 1996, 2001 and 2006 by Place of Enumeration.

Table 7.1: Population Change

	1991	1996	2001	2006	Actual Change (2001-2006)	% Change (2001-2006)
Moree Plains Shire	16,918	15,517	15,737	14,185	-1,552	-9.9
Narrabri Shire	14,653	14,101	13,817	13,051	-766	-5.5
Narrabrine Shire	6,697	6,523	6,621	6,406	-215	-3.2
Warren Shire	3,595	3,290	3,155	2,676	-479	-15.2
Dalby Town Council	9,385	9,517	9,731	9,857	126	+1.3
Wambo Shire	5,184	5,205	5,102	5,178	76	+1.5
Millmerran Shire	3,014	2,830	3,935	3,078	-857	-21.2
Balance NSW	DNA	2,297,406	1,992,526	2,437,165	+444,639	+22.3
Balance QLD	DNA	1,900,233	2,049,489	2,263,902	+214,413	+10.5
NSW	5,732,032	6,038,696	6,371,745	6,585,732	+213,987	+3.4
QLD	2,977,810	3,368,850	3,655,139	4,046,880	+391,741	+10.7
Australia	16,850,334	17,892,423	18,972,350	20,061,651	+1,089,301	+5.7

Source: ABS Census (2006) Time Series Profiles detailing 1996, 2001, 2006. ABS Census (2001) Time Series Profiles detailing 1991.

7.3.1. Millmerran Population Differences 2001 - 2006

The population data for Millmerran was taken from the ABS Census Time Series Profiles based on Place of Enumeration, or the number of people counted in the Millmerran LGA on Census Night. In 1996, 2,830 people were counted. In 2001, 3,935 people were counted, and in 2006, 3,078 people were counted. There is quite a profound difference (n=857) between the number of people counted in 2001 and 2006. The most likely cause of this dramatic increase in population was the development and construction of the multi-million dollar Millmerran Power Project.⁵³ At that time, the project would have brought many temporary workers to the area. The majority of these workers would have likely resided in the LGA until the project was completed in 2003, when they most likely returned to their place of usual residence. The graph here shows a comparison between the two methods of reporting the data based on Place of Enumeration and Place of Usual Residence for the population of Millmerran LGA in 2001 and 2006. Whilst there is still a loss of population from 2001 to 2006, it is unlikely to be as severe as the data collected by Place of Enumeration suggests. This is important to note when reviewing the data in the following sections on population change, which are based on Place of Enumeration.

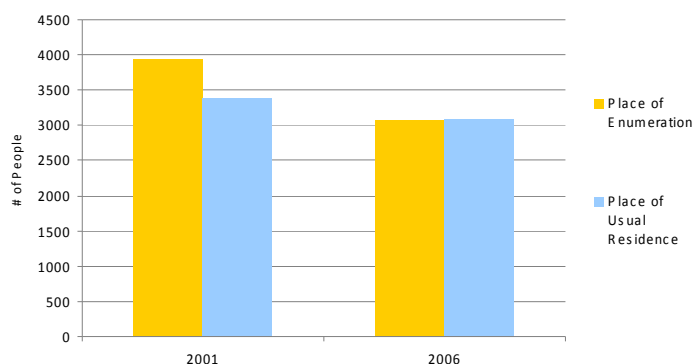


Figure 7.2: Millmerran Population Differences 2001 to 2006
 Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration
 ABS (2001) Census of Population and Housing, Basic Community Profile, By Place of Usual Residence

7.3.2. Total Population Change: 2001 - 2006

Each of the cotton communities, except for Dalby, has experienced depopulation during the period of 2001 to 2006. Millmerran and Warren each experienced a net decrease in population of more than 15%. In other words, more than 1 in 7 people left these LGAs. Collectively, the cotton communities lost in excess of 3,700 residents or more than 7% of its entire collective population between 2001 and 2006. A large proportion of this decline in population may be attributable to the impact of the drought, however Narrabri and Warren both lost population in the preceding five-year period from 1996 to 2001 indicating a continuing trend of rural population decline. Dalby and Wambo actually experienced an increase in population between 2001 and 2006, which may be attributed to their closer proximity to the regional centre of Toowoomba and the major urban areas of the Gold Coast and Brisbane.

⁵³ Sinclair, Knight and Mertz (2000) Millmerran Power Project Supplementary Impact Assessment Study: Executive Summary, April.

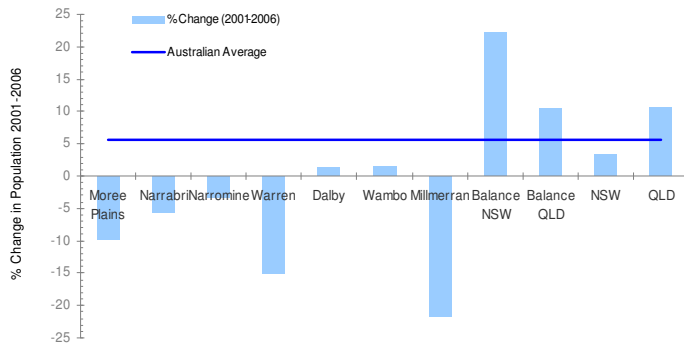


Figure 7.3: % Change in Total Population from 2001 to 2006
 Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.4. Population Change By Age

This graph provides an overall image of the change in population between 2001 and 2006 by different age groups – children, youth, adults and seniors. Quite simply, it is clear that the cotton communities are all experiencing a somewhat similar trend in population change in that they are losing populations of children, youth and adults while the population of seniors or those 55 and over is increasing. This appears to be in contrast to the state and national values that show general increases across all age groups, except for 0-14 year olds in NSW that declined slightly. However, the cotton communities are losing population in the lower age groups at different rates. The following sections look at the changes in population of these different age groups in more detail.

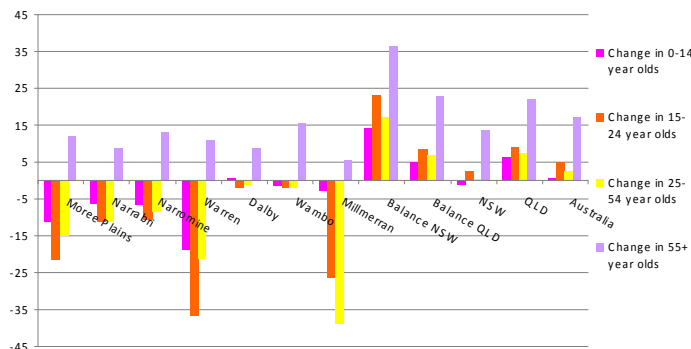


Figure 7.4: % Population Change by Age Group from 2001 to 2006
 Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.4.1. Children 0-14 years old

From 2001 to 2006, the Australian average for population growth of 0-14 year olds was 0.6%. While Dalby matched that change with 0.5%, the rest of the cotton communities saw a decrease in population in this age group. Warren had the largest decrease of population in this age group with a change of -18.7%. The decrease in population in this age group is most likely the result of families with children moving out



of the area. It is interesting to note the rate of increase in population in the Balance benchmarks, especially Balance NSW that experienced a dramatic change of 14.4%.

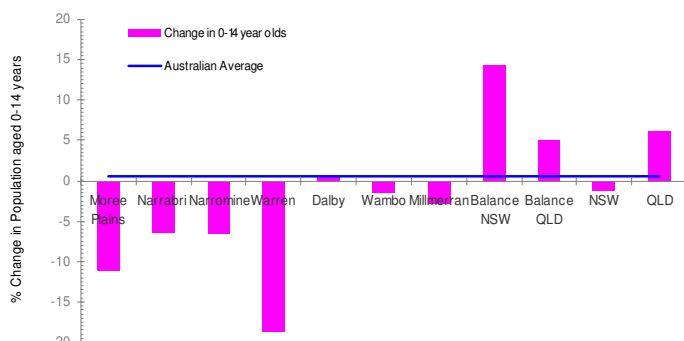


Figure 7.5: % of Population Change Aged 0-14 from 2001 to 2006
Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.4.2. Youth, 15 - 24 years old

Change in the population of young people, or those aged 15 to 24, is often of concern for rural communities. A decrease of population in this age group is typically the result of factors including young people leaving home to study, work or travel, or families with older children moving from the area. A significant loss in population in this age group can often indicate a lack of desirable opportunities for young people to study or work and in turn remain in the area.

This graph shows a stark contrast between the cotton communities and the state and national benchmarks for population change in this age group. The national average is a positive 5.1% change, with Balance NSW reporting a dramatic change of 23%. However, the cotton communities consistently lost young people with Warren, Millmerran and Moree Plains suffering the greatest changes of -36.7%, -26.5% and -21.6% respectively.



Figure 7.6: % of Population Change Aged 15-24, 2001-2006
Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration



7.4.3. Adults, 25-54 years old

The trend in population change for adults between 25 and 54 is quite similar to the youth population change with regards to both the differences between the cotton communities and the state and national benchmarks, as well as the differences between the LGAs. The graph illustrates again a decrease in population in this age group, and especially so in Moree Plains, Warren and Millmerran – with Millmerran experiencing the most significant loss of population in the age group at –38.6%. Again, this dramatic decrease in the adult population of Millmerran is likely to be related to the loss of temporary power plant construction workers. Of the cotton communities, Dalby fared the best with a change in population in this age group of

–1.1%.



Figure 7.7: % Change in Population Aged 25-54, 2001-2006

Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.4.4. Seniors, 55+ years old

Australia has an ageing population; this is obvious when we observe the change in population of those aged over 55 from 2001 to 2006, where the average rate of change across the country was 17.1%. The increase in population change in rural and regional areas is illustrated by the values expressed for example by Balance NSW with a change of 36.5%.

The cotton communities each saw an increase in population change in this age group, though not at quite as high as the state and national benchmarks. Wambo had the highest rate of growth at 15.7%, while Millmerran had the lowest rate at 5.6%.

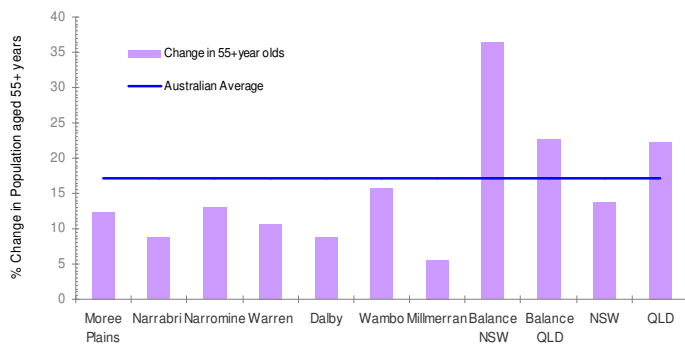


Figure 7.8: % Change in Population Aged 55+, 2001-2006
 Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.5. Population Change By Indigenous Status

The rate of change of the Indigenous population from 2001 to 2006 nationally was 11.0%. The state benchmarks also reported marked growth of Indigenous population with Balance NSW reporting the highest change at 28.5%.

The change in the Indigenous population among the cotton communities appears to be quite varied, as Moree Plains, Warren and Millmerran all lost population of indigenous residents while the other Narrabri, Narromine, Wambo and Dalby experienced an increase. Wambo had the highest rate of population change among Indigenous residents at 27.2%, while Warren had the largest decrease at -12.2%.

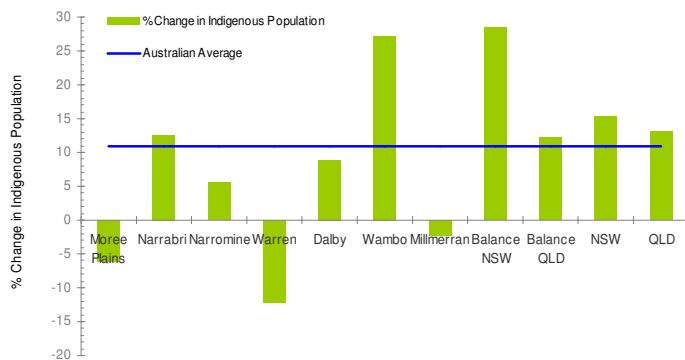


Figure 7.9: % Change in Population by Indigenous Status, 2001- 2006
 Source: ABS (2006) Census of Population and Housing, Time Series Profile, By Place of Enumeration

7.6. Distribution of Males & Females

The distribution of males and females in a community can often be a sign of differences in life expectancy or migration patterns. For example in a booming mining community we may see a substantially larger proportion of males to females as the community may have many working males who are temporary residents or who may travel to the area for work but essentially 'go home to their families' where they



reside more permanently outside the area. This graph shows the number of males for every 100 females – for all males and for Indigenous males.

Moree Plains and Millmerran had the highest rate, with 106 and 107.3 males per 100 females respectively. It is interesting to note the difference to the proportion of Indigenous males to Indigenous females, where the proportion of males is much lower than that for all males. This is especially the case in Warren, which reports 82 Indigenous males for every 100 Indigenous females. However, it is quite a different picture in Millmerran where there are 107.3 Indigenous males for every 100 Indigenous females, although this is likely to reflect the much smaller Indigenous population in this LGA.

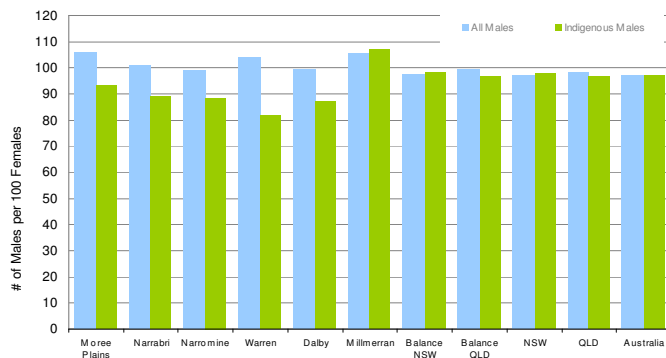


Figure 7.10: # of Males per 100 Females

Source: ABS (2006) Census of Population and Housing, Basic Community Profiles by Place of Usual Residence

7.7. Family Types

Communities are made up of a variety of households including people living on their own and different family types. For the ABS Census, “families are classified in terms of the relationships that exist between a single family reference person and each other member of that family.”⁵⁴ This information takes into account couple relationships, parent-child relationships, child dependency relationships or other familial relationships.

The cotton communities appear to have a similar composition of family types when compared to the state and national benchmarks. Millmerran does appear to have a much higher proportion of couples without children (45.7%) when compared to the national average of 37.3%.

⁵⁴ ABS (2006) Short Definitions and Classifications: Family Composition, 2901.0 Census Dictionary (Reissue).

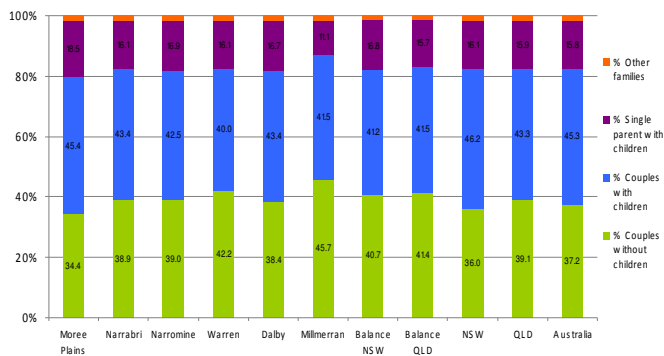


Figure 7.11: Proportion of Different Family Types
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, Household Composition

7.7.1. Families with Children

This graph looks at the proportion of families with children in more detail. This group includes couples with children and single parents with children. The classification of ‘other family’ is excluded from this group as these families may or may not have children.

This graph shows that a high proportion of all households in each of the cotton communities are families with children. Moree Plains has the highest proportion of 63.9%, and is the only cotton community above the Australian average of 61.0%. Millmerran reports the lowest proportion of families with children at 58.0%.

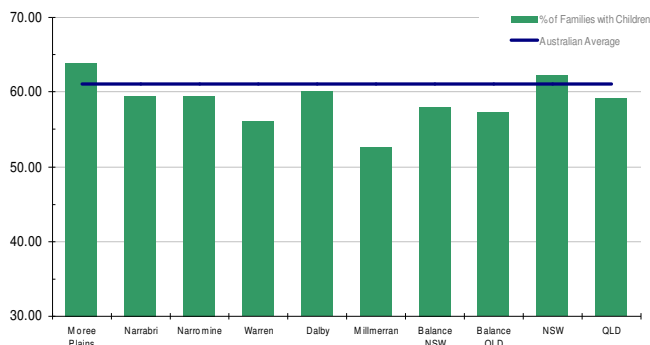


Figure 7.12: Proportion of Families with Children
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, Household Composition

7.7.2. Lone Person Households

In 2006, the proportion of lone person households across Australia was 24.4%, such that nearly a quarter of all dwellings across the country had a single person residing within. The rate of lone person households in the cotton communities is similar to the Australian average, although some variation exists. In particular, Warren has a proportion of lone person households that is higher than the national average accounting for 28.3% of all households. Dalby has the lowest proportion at 23.4%, similar to the values for Balance QLD and QLD.



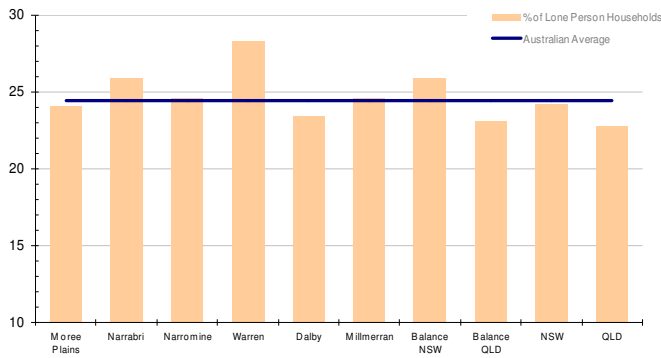


Figure 7.13: Proportion of Households that are Lone Person Households
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, Household Composition

7.8. Proportion of Separated & Divorced

As this graph shows, the cotton communities have a lower proportion of separated and divorced individuals of those who have been married when compared with the state and national benchmarks. Warren reports the lowest rate at 13.5%. Moree Plains had the highest at 16.3%, which is below the state and national benchmarks. It is interesting to note that both Dalby and Millmerran are well below both the Queensland and Balance Queensland values that are both higher than the national average.

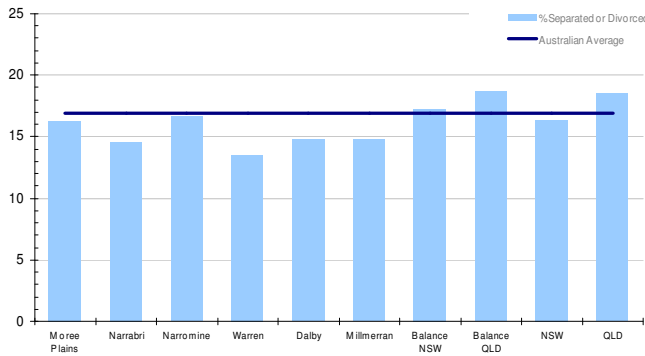


Figure 7.14: Proportion of Individuals who have Married that are Separated or Divorced
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, Registered Marital Status

7.9. Net Population Projections

Net population projections and projected population change are shown in Table 7.2. Population change in country towns may be largely driven by external events such as drought or the mining boom rather than demography. Thus, the DIPNR projections are often over estimated. This is evident when we look at the DIPNR projections for 2006, compared with the actual 2006 counts from the ABS Census – see first two columns of the table. Projections often tend to underestimate the outward migration of young adults. This is especially relevant when looking at population projections for country areas. These projections show



that Narrabri and Warren could experience the highest rate of depopulation, with Moree Plains and Narromine relatively stable. The QLD cotton communities are projected to see the greatest increases of the towns, with Millmerran projected to increase 15.7%.

Table 7.2: Net Population Projections 2006 – 2026

	2006 Actual Population (ABS)	2006 Population Projection (DIPNR)	2026 Population Projection (DIPNR)	Projected Change 2006 – 2026 (DIPNR)	% Projected Change 2006 – 2026 (DIPNR)
Moree Plains	13,972	15,958	15,885	-73	-0.5%
Narrabri	13,113	14,063	12,292	-1,771	-12.6%
Narromine	6,510	7,006	7,166	160	2.3%
Warren	2,749	3,203	2,692	-511	-16.0%
Dalby	9,791	10,500	11,562	1,062	10.1%
Millmerran	3,082	3,454	3,997	543	15.7%
NSW	6,549,178	6,843,858	8,002,499	1,158,641	16.9%
QLD	3,904,628	4,041,368	5,583,956	1,542,588	38.2%

Source: DIPNR (2005) NSW SLA Population Projections 2001-2031 and PIFU (2006) Projected Resident Population for Local Government Areas

7.9.1. Net Population Projections by Age

The projected population change in broad age categories is shown here in Table 7.3. A rapid ageing of the population is projected across all of the cotton communities. Millmerran might especially see this with a projected increase of 93% of population in the 65 and over age group. The projections for the communities in this age group are largely similar or less than the state equivalents. Strong decreases in the youth age group (0 to 14 yrs) are projected across the cotton communities, and are significantly higher than the state benchmarks that are projected to experience increases in this age range. The NSW cotton communities especially are projected to experience the greatest loss among young people with all the towns projected to lose between 21 – 35% of their youth population.

Table 7.3: % Projected Population Change 2006-2026 by Age Group

% Projected Population Change 2006 – 2026 by Age Group	0-14 Yrs	15-39 Yrs	40-64 Yrs	65+ Years	Total Change
Moree Plains	-21%	-13%	9%	68%	0%
Narrabri	-34%	-24%	-13%	45%	-13%
Narromine	-22%	-10%	4%	63%	2%
Warren	-35%	-25%	-19%	43%	-16%
Dalby	-5%	0%	11%	60%	10%





% Projected Population Change 2006 – 2026 by Age Group	0-14 Yrs	15-39 Yrs	40-64 Yrs	65+ Years	Total Change
Millmerran	-5%	-18%	35%	93%	16%
NSW	0%	5%	16%	72%	17%
QLD	21%	25%	34%	121%	38%

Source: DIPNR (2005) NSW SLA Population Projections 2001-2031 and PIFU (2006) Projected Resident Population for Local Government Areas.

7.10. Total Net Migration

Net migration is the measure of people moving in to and out of a community. If there were equal numbers of people moving out of a community as well as moving in, the migration number would be 0 – such that there would be no net gain or loss recorded. These figures presented here are derived from ABS Census data of ‘Place of Usual Residence 5 years ago’. The calculation compares a respondent’s place of residence in 2001 and 2006. This graph shows the total net migration in terms of persons. It is obvious that the cotton communities are each seeing a net loss of population due to out migration. Moree Plains saw the greatest net migration change with –1741 persons.

With regards to the data, we exclude children aged 0-4 years old, as we cannot be certain with regard to their residence between the inter-censal years. We also exclude those ‘Not Stated’ as either no previous address was stated or it was inappropriately described. We also remove those who were overseas 5 years ago as the census data counts only the number of residents who previously resided overseas and now live in specified location, while no such data exists for residents currently living overseas. The following sections of the report look at migration in terms of age, household type and weekly income level.

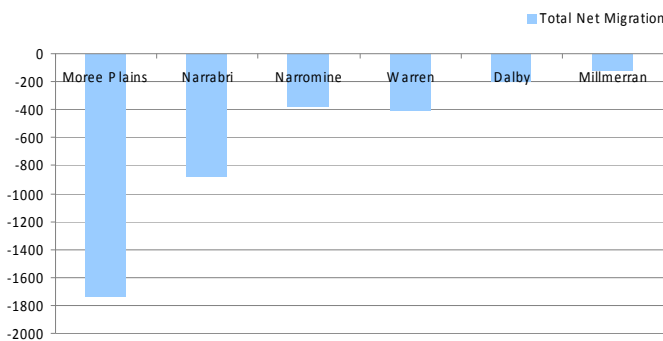


Figure 7.11: Net Migration from 2001 to 2006

Source: ABS (2006) Census of Population and Housing, Place of Usual Residence 5 Yrs Ago – Special Order

7.10.1. Net Migration by Age

This graph looks at net migration in terms of different age groups. We see quite different patterns between the different communities. For example, Moree Plains, Warren and Dalby appear to be losing population due to migration across all age groups at a somewhat similar rate for each community.



However, in Narrabri, Narromine and Millmerran we see more variation in the age groups that are losing population due to migration – with significant net loses of young people in the 15 – 24 year old age group in each area.

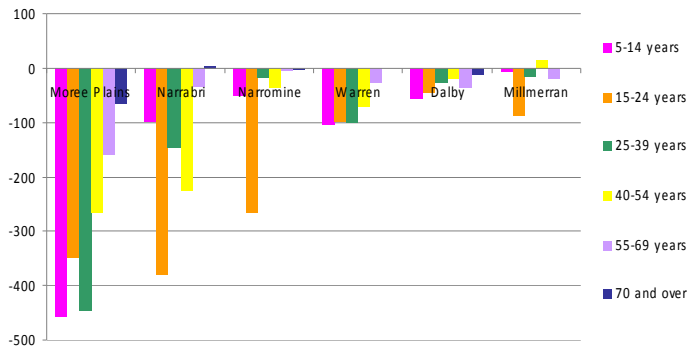


Figure 7.12: Net Migration by Age Group
Source: ABS (2006) Census of Population and Housing, Place of Usual Residence 5 Yrs Ago – Special Order

7.10.2. Net Migration by Household Type

This graph shows the net migration by household type. We see a similar pattern among the cotton communities in that they are all primarily experiencing the greatest net migration loses amongst couples with children. It is important to point out that the number refers to total number of persons and not number of families. Thus, Moree Plains experienced a net migration loss of 762 individuals that reside in households classified as couples with children – this number includes both adults and children. It is also important to remember that 5 years ago a couple without children may have moved to Moree, and by 2006 subsequently moved from the area with 1 child that was born in Moree.

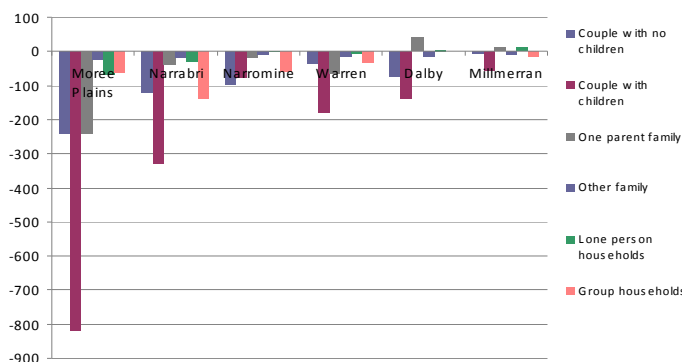


Figure 7.13: Net Migration by Household Type
Source: ABS (2006) Census of Population and Housing, Place of Usual Residence 5 Yrs Ago – Special Order

7.10.3. Net Migration by Weekly Income Level

This graph shows net migration in terms of weekly income level. The cotton communities all appear to have experienced a net migration loss across income level groups – except for a small net gain of low income earners (\$1 - \$249) to Millmerran, who may be a mixture of casual or part time workers,





pensioners and others receiving benefits. What is interesting is that Moree Plains, Narrabri and Warren have all experienced a net loss among lower income levels (\$1-\$249 per week) as well as those in the highest income level (\$1,000+).

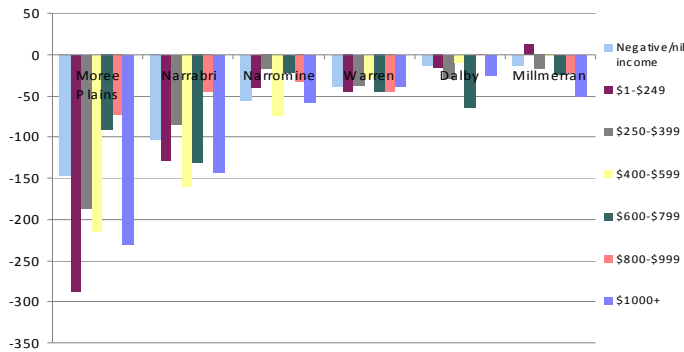


Figure 7.14: Net Migration by Weekly Income Level
Source: ABS (2006) Census of Population and Housing, Place of Usual Residence 5 Yrs Ago – Special Order

7.11. SEIFA Scores

The ABS produces a set of indexes that combine a selection of socio-economic indicators together to assess levels of advantage and disadvantage called SEIFA. SEIFA stands for Socio-Economic Indexes for Areas. There are four indexes released as part of SEIFA 2001 including:

- Socio-Economic Disadvantage
- Socio-Economic Advantage/Disadvantage
- Economic Resources
- Education and Occupation

The following sections look at each index individually.

Table 7.4: Comparative SEIFA Scores

	Socio-Economic Disadvantage	Socio-Economic Advantage/Disadvantage	Economic Resources	Education and Occupation
Moree Plains	928.9	944.6	971.2	927.6
Narrabri	966.8	944.9	946.8	938.4
Narromine	948.2	925.8	919.5	931.0
Warren	959.5	935.8	943.2	924.3
Dalby	989.5	947.4	951.8	948.9
Wambo	995.6	926.4	901.4	936.5
Millmerran	976.2	927.1	952.5	899.8
Balance NSW	973.1	955.2	951.0	961.5
Balance QLD	978.3	959.4	962.2	960.3



	Socio-Economic Disadvantage	Socio-Economic Advantage/ Disadvantage	Economic Resources	Education and Occupation
NSW	1000.5	1015.3	1030.5	1009.7
QLD	991.5	984.6	986.6	982.6
Australia	1002.2	1004.9	1009.3	1001.3

Source: ABS (2004) Socio-Economic Index For Areas (SEIFA)

7.11.1. Index of Relative Socio-Economic Disadvantage

When the cotton communities are compared with their respective states and Australia, we see that they rank as more disadvantaged overall – as a higher SEIFA score indicates a higher level of advantage. In 2001, Moree Plains was the most disadvantaged LGA of the selected communities with an index of 928.9, and in turn the 13th most disadvantaged LGA in NSW. Narrabri, Narromine and Warren fared only slightly better, through all rank in the bottom two quintiles of disadvantage in NSW. Dalby and Millmerran ranked higher than the NSW cotton communities, but were still more disadvantaged than the QLD state average.

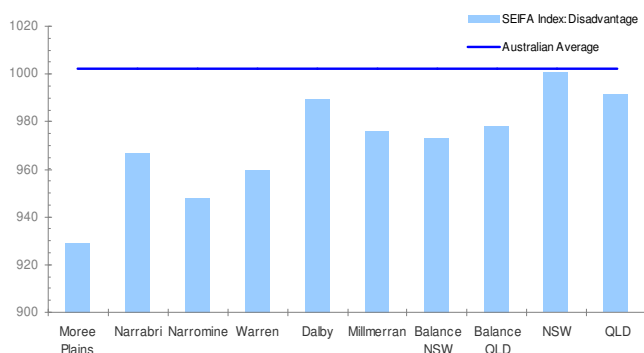


Figure 7.15: SEIFA Index of Relative Socio-Economic Disadvantage (2001)
Source: ABS (2004) SEIFA

7.11.2. Index of Relative Socio-Economic Advantage/ Disadvantage

For this SEIFA index, the cotton communities are all well below the national average of 1004.87. Narromine is the most disadvantaged of the cotton communities with a score of 925.83. Whilst Moree Plains, Warren and Narrabri ranked higher than Narromine, all were ranked in the bottom 50% of NSW LGAs. Dalby recorded the highest score of 947.35, though still below the Queensland state benchmarks.



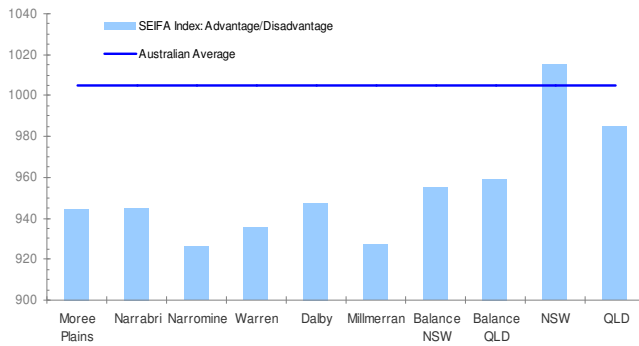


Figure 7.16: SEIFA Index of Relative Socio-Economic Advantage / Disadvantage (2001)
Source: ABS (2004) SEIFA

7.11.3. Index of Economic Resources

The cotton communities all fall well below the national average of 1009.32 for access to economic resources, though they are relatively on par with the Balance NSW and Balance QLD. Moree Plains ranked the highest with a score of 971.19, while Narromine ranked the lowest at 919.45.

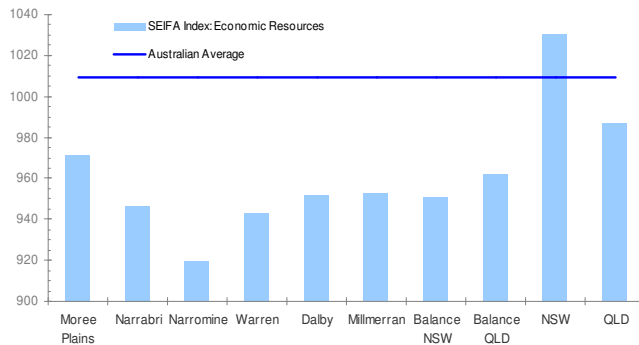


Figure 7.17: SEIFA Index of Economic Resources (2001)
Source: ABS (2004) SEIFA

7.11.4. Index of Education and Occupation

Perhaps the most striking result of the SEIFA indices is the access of the cotton communities to educational and occupational opportunities. All of the NSW cotton communities rank in the bottom two quintiles with Warren as the lowest of the NSW cotton communities. Millmerran placed in the bottom 20% for access to education and occupational opportunities.

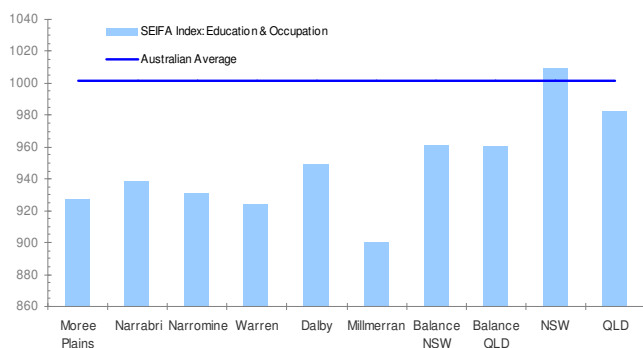


Figure 7.18: SEIFA Index of Education and Occupation (2001)
Source: ABS (2004) SEIFA

7.12. Welfare Recipients

This table details the number of actual welfare recipients for the year 2003. Please note that raw numbers have been provided based on the estimated regional population - estimations released by the ABS for these areas do not seem to align with official Census counts between 2001 and 2006. Thus, while the numbers themselves may include slight errors, it is acceptable to compare the values between the towns, as any error would be common to all.

Table 7.5: Actual Welfare Recipients

	Moree Plains	Narrabri	Narromine	Warren	Dalby	Millmerran	NSW	QLD	Australia
Age Pensions	825	1,275	627	296	797	256	611,916	320,351	1,808,930
Disability	420	457	277	105	313	130	219,998	129,406	665,329
Newstart	742	534	187	134	280	87	170,845	117,621	554,875
Parenting Allowance	575	351	205	80	262	57	143,464	97,730	444,801
Youth	274	292	139	56	220	51	122,126	80,173	398,912
Other Pension	476	509	192	136	357	183	212,192	130,800	641,390
Total	3,312	3,418	1,628	808	2,229	765	1,480,539	876,060	4,514,201

Source: ABS (2003) National Regional Profiles 2003

This figure provides a proportional breakdown by welfare type across the cotton communities. The large single welfare type is age pensions for the retired accounting for approximately 25%-40% of all welfare recipients. Moree Plains had the lowest proportion of aged pension support, but had a larger proportion of Newstart (unemployment assistance) recipients, which corresponds with the above average rate of unemployment in Moree Plains. Moree Plains also had a higher proportion of Parenting Allowance recipients at 17% compared with the other towns, state and national averages.

Please note that data is not available for Balance NSW or Balance QLD.



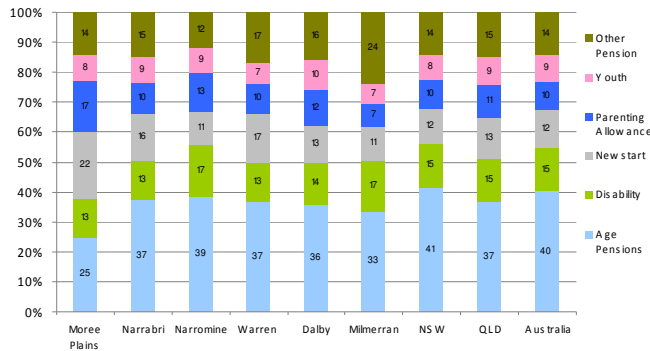


Figure 7.19: Proportion of Welfare Types
Source: ABS (2003) National Regional Profiles 2003

7.13. Gaming Machines

This graph shows the per capita expenditure on gaming machines per year for 2006 for the NSW cotton communities compared to the NSW average of \$1011. While each of the towns are below the state average for expenditure, there are significant differences between the towns – with Moree Plains recording the highest per capita expenditure rate of \$991 and Narromine with the lowest at \$685.

Please note we were unable to obtain data for the Queensland cotton communities, Balance and national benchmarks.

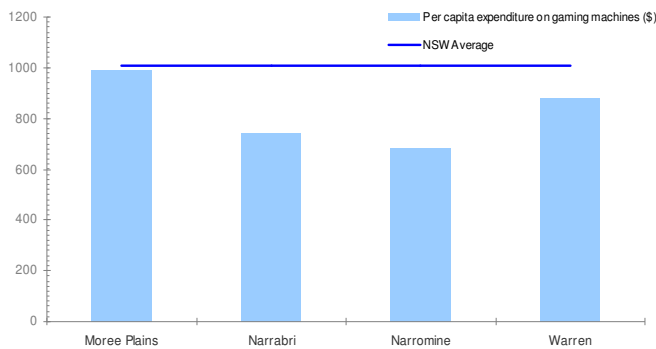


Figure 7.20: Per Capita Expenditure on Gaming Machines
Source: NSW Department of Gaming and Racing (2006), Judith Stubbs & Associates (2006).

7.14. Skills Base

This indicator looks at the proportion of the population 15 years and over and their skill level. We classify the population into two categories, those without formal qualifications and those with trade or better qualifications. Trade or better qualifications include:

- Postgraduate degree
- Graduate Diploma and Graduate Certificate



- Bachelor Degree
- Advanced Diploma and Diploma
- Certificate nfd
- Certificate III & IV(c)
- Certificate I & II(d)

Narromine had the highest proportion of those with trade or better qualifications at 29.6% of the population aged 15 and over, while Millmerran recorded the lowest at 25.1%.

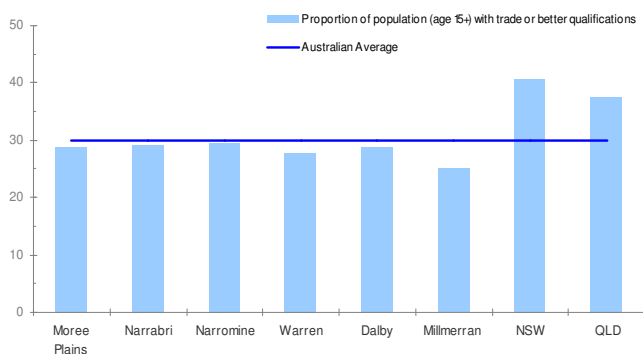


Figure 7.21: Skills Base of Population (15 yrs+)
Source: ABS (2006) Census of Population and Housing, Basic Community Profiles

7.15. Total number of students attending school

The total number of students attending school as reported here includes students attending Government, Catholic and Other Non Government schools. Note that data for Indigenous student enrolments were reported differently between 2001 and 2006. Data reported by the Census in 2001 was by Place of Enumeration - those counted in a location on Census Night, while data reported for 2006 was by Place of Usual Residence.

Table 7.6: Total infants/primary school enrolments, 2001 & 2006

	Total primary school enrolments		Total Indigenous primary school enrolments		Total secondary school enrolments		Total Indigenous secondary school enrolments	
	2006	2001	2006	2001	2006	2001	2006	2001
Moree Plains	1,379	1,660	396	463	641	785	185	216
Narrabri	1,299	1,514	185	210	849	908	131	113
Narromine	663	741	188	179	423	533	110	104
Warren	276	328	65	52	104	138	21	29
Dalby	991	1,015	103	97	541	623	52	60
Millmerran	339	375	17	22	170	136	13	3





	Total primary school enrolments		Total Indigenous primary school enrolments		Total secondary school enrolments		Total Indigenous secondary school enrolments	
	2006	2001	2006	2001	2006	2001	2006	2001
Balance NSW	217,231	199,738	-	-	169,069	145,360	-	-
Balance QLD	196,234	196,639	-	-	130,315	123,649	-	-
NSW	546,866	579,761	22,308	21,618	437,688	438,772	13,603	11,581
QLD	349,440	347,676	20,727	20,055	237,467	225,258	11,592	9,396
Australia	1,696,790	1,771,411	71,731	71,577	1,275,139	1,267,103	39,669	34,734

Source: ABS (2006) Time Series Profiles, By Place of Enumeration. ABS (2006) Indigenous Community Profiles, By Place of Usual Residence. ABS (2001) Indigenous Community Profiles, By Place of Enumeration.

7.15.1. Infants/Primary School Enrolments

This graph shows the % change in students enrolled in primary school from 2001 to 2006. The Australian average reports a -4.2% change in enrolment. Each of the cotton communities reports a negative change in infant/primary enrolments, as does NSW – while Balance NSW and Queensland report positive changes. Moree Plains had the largest proportion change with 16.9%, and Dalby had the smallest change at -2.4% change in enrolments.

Telephone interviews with principals and other representatives from schools in the cotton communities seem to dispute some of the data obtained from the census. For example, Dalby South State School indicates that they have seen enrolments increase by 150 students in the last 2 years, in their view this is due to growth of the school's reputation, newcomers moving to the area and a perception that some students may be leaving private schools due to high fees.⁵⁵ However, such a change from private to public enrolment would not make any difference to the figure below if the student was enrolled in schools within the LGA, as the values presented below are total enrolment numbers including Government, Catholic and Non-Government schools. Likewise, the Narromine Public School reports increases in enrolments, especially among Indigenous students.⁵⁶

⁵⁵ Telephone interview with Dalby South State School representative, 30 November 2007.

⁵⁶ Telephone interview with Narromine Public School representative, 29 November 2007.

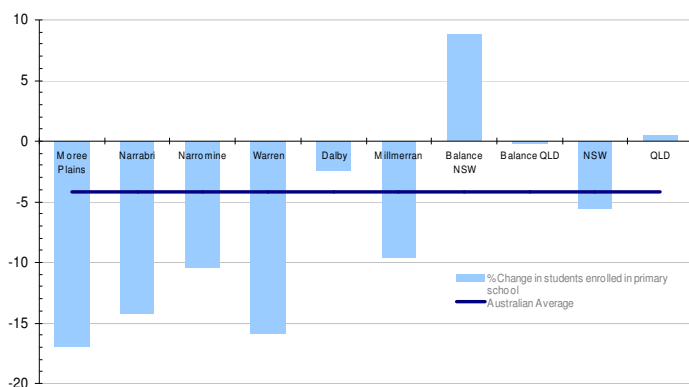


Figure 7.22: % Change in Primary School Enrolments (2001 – 2006)
Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

7.15.2. Infants/Primary School Enrolments by Indigenous Status

Total Indigenous primary school enrolments		
	2006	2001
Moree Plains	396	463
Narrabri	185	210
Narromine	188	179
Warren	65	52
Dalby	103	97
Millmerran	17	22
Balance NSW	-	-
Balance QLD	-	-
NSW	22,308	21,618
QLD	20,727	20,055
Australia	71,731	71,577

The Australian average % change in Indigenous students enrolled in Infants/Primary schools is relatively unchanged between 2001 and 2006 at 0.2%. Alternatively, the cotton communities show dramatic changes in Indigenous student enrolments ranging from Millmerran at -22.7% change to Warren at 25.0% change. It is important to remember that these percentages may be based on quite small numbers of students – thus a change of a few students can create a large proportional shift. For example, in 2001 Millmerran reported 22 students enrolled, and 17 students enrolled in 2006. In other words, a change of 5 students produced a decrease of over 20%. In many communities a change like this could occur if one family moved away from the area in between census collections.



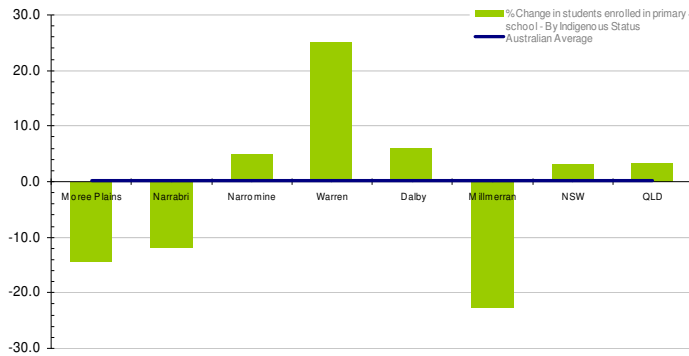


Figure 7.23: % Change in Primary School Enrolments for Indigenous Students (2001 – 2006)
Source: ABS (2006) Census of Population and Housing, Indigenous Community Profiles, By Place of Usual Residence.
ABS (2001) Census of Population and Housing, Indigenous Community Profiles, By Place of Enumeration

7.15.3. Secondary School Enrolments

The Australian average proportional change for secondary school enrolments is relatively unchanged from 2001 to 2006 at 0.6%. All of the cotton communities, except for Millmerran, report a negative % change in secondary enrolments. Warren had the largest reduction at -24.6%. Millmerran, on the other hand, recorded a positive change with 25% growth in secondary school enrolments.

The Millmerran State School (prep – Yr10) reports that the majority of their students continue on to Pittsworth High School or boarding schools for year 11 & 12.⁵⁷

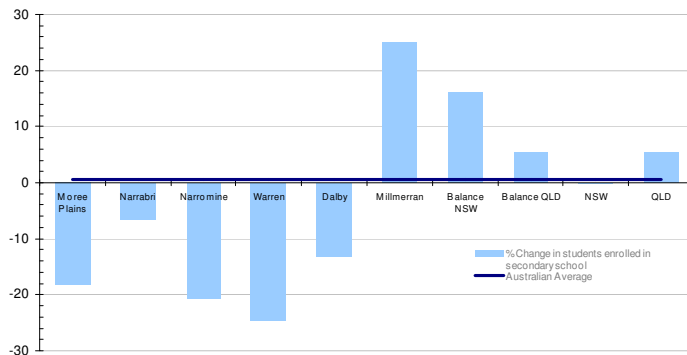


Figure 7.24: % Change in Secondary School Enrolments (2001 – 2006)
Source: ABS (2006) Census of Population and Housing, Time Series Profiles, By Place of Enumeration

⁵⁷ Telephone interview with Millmerran State School Principal, 20 November 2007.



7.15.4. Secondary School Enrolments by Indigenous Status

	Total Indigenous secondary school enrolments	
	2006	2001
Moree Plains	185	216
Narrabri	131	113
Narromine	110	104
Warren	21	29
Dalby	52	60
Millmerran	13	3
Balance NSW	-	-
Balance QLD	-	-
NSW	13,603	11,581
QLD	11,592	9,396
Australia	39,669	34,734

Again, we see differences across the cotton LGAs regarding school enrolments for Indigenous students. In some communities, such as Narrabri and Millmerran, enrolments increased. While for others like Warren, Dalby and Moree Plains, enrolments decreased. Again, it is important to remember that often large percentage swings can appear more profound when the total numbers are quite small. For example, with only 3 Indigenous students reportedly enrolled in secondary school in Millmerran in 2001, the increase to 13 students in 2006 appears as 333% increase. It would be of potentially greater value to track this indicator over a longer period of time to see if more of a trend emerges.

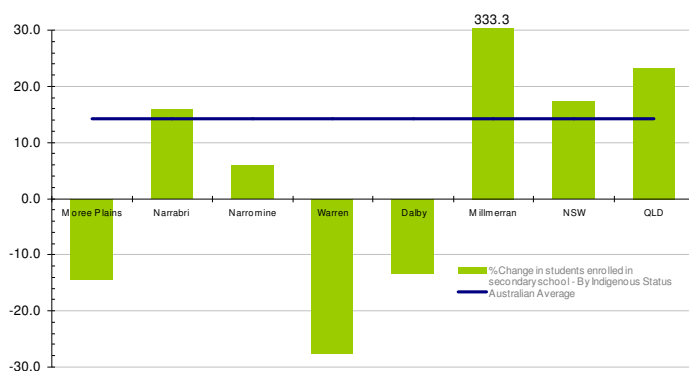


Figure 7.25: % Change in Secondary School Enrolments for Indigenous Students (2001 – 2006)
Source: ABS (2006) Census of Population and Housing, Indigenous Community Profiles, By Place of Usual Residence.
ABS (2001) Census of Population and Housing, Indigenous Community Profiles, By Place of Enumeration.



7.16. Participation in Higher & Adult Education

This graph shows the proportion of the adult population (15 years+) attending some sort of educational institution, which could include TAFE or university for example. The Australian rate in 2006 was 12.7%. Each of the cotton communities report lower participation rates than the national and state benchmarks. Moree Plains and Narrabri had the highest rates of participation at 9.0%, while Millmerran had the lowest rate at 5.6%. Participation in higher and adult education is inextricably linked to access to educational opportunities. Recall that the cotton communities all scored quite low on the SEIFA index for education and occupation opportunities, with Millmerran scoring the lowest.

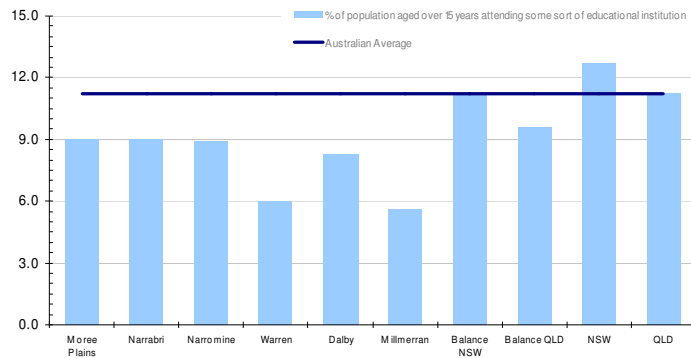


Figure 7.26: Participation in Higher and Adult Education

Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, By Place of Usual Residence

7.17. Access to Information: Broadband Internet

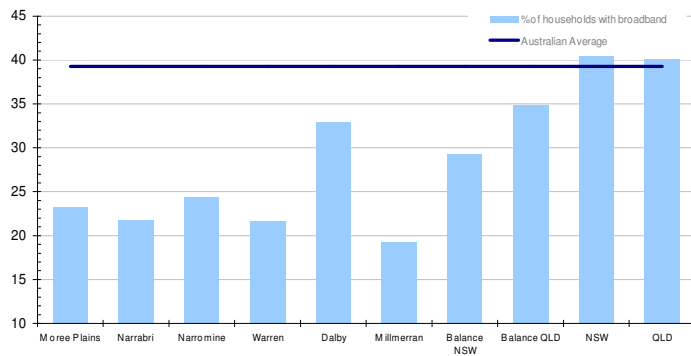


Figure 7.27: Broadband Utilisation by Households

Source: ABS (2006) Census of Population and Housing, Basic Community Profiles, By Place of Usual Residence

Broadband utilisation is an increasingly important aspect of communication in today's society. According to the Telstra BigPond website, ADSL broadband is available in each of the cotton communities and approximately 98% of the country is now covered.⁵⁸ However, it is unknown the exact availability at the

⁵⁸ Information obtained from Telstra BigPond website, www.beeneverywhere.com.au 18 December 2007.

time the 2006 Census was taken. The rate of take up of broadband for all cotton communities is lower than the state and national rates, except for Balance NSW which falls below the rate in Dalby. Dalby had the highest rate of uptake at 32.9% and Millmerran with the lowest at 19.2%. Results for the NSW towns are quite similar to each other. Perhaps, the availability of broadband in Dalby is superior to that of the other communities.

7.18. Access to Information: Library Circulation

This figure shows the library circulation rates per 100 adults in the cotton LGAs. This would include all books, DVDs, magazines and other materials offered by local libraries. The idea of tracking this indicator is to get a sense of how much people are using their local libraries and in turn how accessible the libraries are.

Moree Plains, Narrabri and Narromine all have relatively similar circulation rates, however Warren has a markedly higher rate than the NSW cotton LGAs and the state average. It would be interesting to further examine the potential causes for this difference.

The data on library circulation rates is available from the ABS Census Regional Statistics, which currently is available for NSW. It is important to note that these values are for the period of 2004-05.

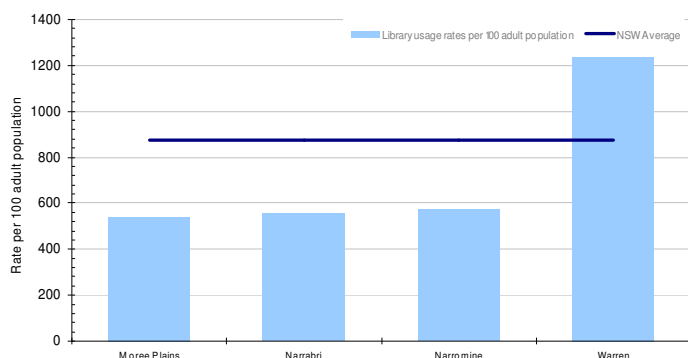


Figure 7.28: Library Circulation Rates per 100 adults

Source: ABS (2006) NSW Regional Statistics, Data from 2004-05.

ABS (2006) Census of Population and Housing, Basic Community Profiles, By Place of Usual Residence

7.19. Access to Specific Health Services: Antenatal Care

This figure shows the proportion of pregnant women who attended their first antenatal visit before 20 weeks gestation of their pregnancy. These values provide an indication of both the access of health services for mothers and their babies, as well as rate of uptake of the services that exist. Each of the NSW cotton LGAs were either above or slightly below the NSW average of 86.8%. Narrabri had the highest



rate at 91.9%, while Moree Plains had the lowest at 86.8%. The NSW Health Department suggests that teenage mothers and Aboriginal mothers are less likely to attend antenatal visits.⁵⁹

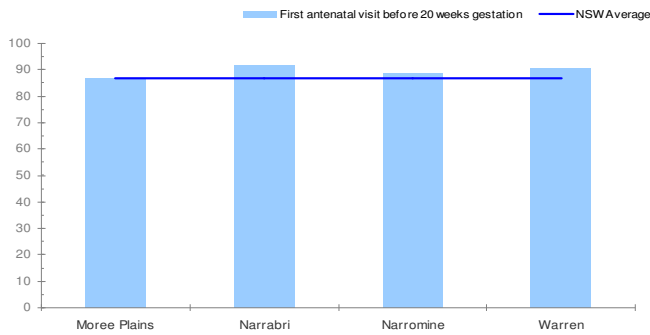


Figure 7.29: % of Pregnant Women who Attend Antenatal Visits
Source: NSW Health Department (2006) First antenatal visit before 20 weeks of gestation by local government area, NSW 2002 to 2004 combined.

7.20. GP Services per 1,000 Population

This indicator looks at the number of non-referred attendances to a General Practitioner (GP) per 1,000 population – thus at what rate are people visiting the doctor. The Australian average rate is 4.7 services per 1,000 persons. The cotton communities all report quite similar values to each other and the Balance NSW and Balance QLD values. Moree Plains had the lowest rate at 3.3 services per 1,000 persons, while Narrabri reported the highest at 4.4.

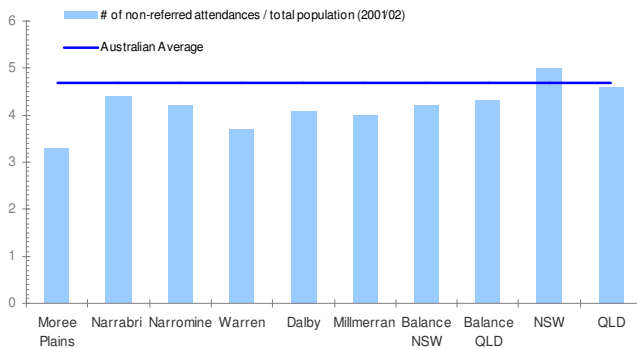


Figure 7.30: GP Services per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period

⁵⁹ NSW Health Department (2006) Report of the New South Wales Chief Health Officer: Pregnancy and the newborn period Antenatal care by local government area. Accessible online at: www.health.nsw.gov.au/public-health/chorep/mum/mum_ante_lgamap.htm



7.21. Health Risk Factors

Health risk factors are health and lifestyle related behaviours that are known to impact on an individual's current and future health.⁶⁰ We have selected four indicators to track health risk including rates for very high levels of psychological distress, smoking, physical inactivity and high health risk due to alcohol consumed. The following sections look at each of these indicators in more detail. The table below shows the rates for the specific indicators per 1,000 population compared with each other. We see that across the cotton communities, as well as the state and national benchmarks, rates for smoking and physical inactivity are far higher than the other two indicators. Please note that data is unavailable for Warren.

Table 7.7 Summary of Health Risk Factors

Specific Indicators (Per 1,000 population)	Cotton Communities						Balance of States and National				
	Moree Plains	Narrabri	Narromine	Warren	Dalby	Millmerran	NSW	QLD	NSW	QLD	Australia
Rate of very high level of psychological distress (18+)	35.8	37.2	39.5	DNA	37.1	26.9	38.9	37.2	36.8	37	36.8
Rate of smokers (18+)	295.1	277.9	293.4	DNA	272.5	283.2	269.8	271.7	241.3	262.3	248.5
Rate of physical inactivity	405.1	393.9	393.6	DNA	351.9	371.2	349.9	330.7	341.2	321.3	316.5
Rate of high health risk due to alcohol consumed	61.2	60.5	60.1	DNA	45.5	61.3	47.4	49.5	40.1	46.6	42.1

Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS) and ABS (unpublished) data

7.21.1. Health Risk Factors Comparison

This graph shows a comparison between the rates of the various health risk factors per 1,000 population. The purpose of this graph is to illustrate the much higher rates generally of smoking and physical inactivity compared to high health risk due to alcohol consumed and very high level of psychological distress. This is a pattern we see across the cotton communities, the states and nationally.

⁶⁰ For a greater discussion please see the Australian Institute and Health and Welfare (AIHW) *Indicators of Health Risk Factors*, 2003.



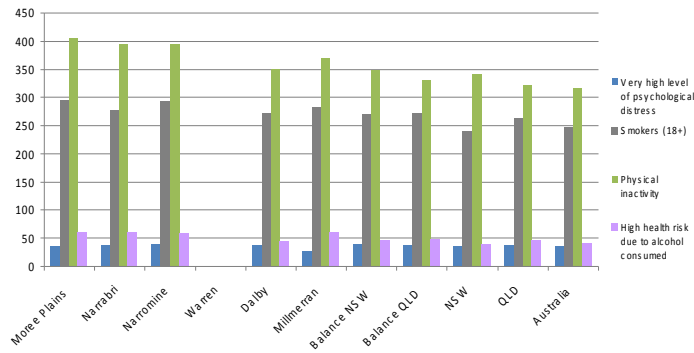


Figure 7.31: Comparison of Health Risk Factor Rates

Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

7.21.2. Very High Psychological Distress

In general, the cotton communities report quite similar rates of self-reported very high levels of psychological distress for those aged 18 and over when compared with the state or national averages. Millmerran Shire had the lowest rate of 26.9 per 1,000 persons - 27.3% below the QLD benchmark. However, as many health providers noted in telephone interviews, these rates are quite likely to have increased since the data was collected in 2001 due to the worsening drought. A representative from the Bush Nurse service in Cecil Plains felt that the Millmerran value would most likely be higher now, citing some recent suicides by farmers and increasing stress on families due to the drought. Moreover, while mental health services are available, the difficulty is often that people who need help do not access the services that are available.⁶¹

The Diversity Counselling service in Moree provides private services for the Moree and Narrabri areas, plus staff travel up to 1.5 hours to see patients in outlying areas. The service also reports that some patients also travel great distances to see a counsellor. Depending on referrals, the waiting list to be seen ranges from 2 weeks to 4 months. The demand for mental health services has increased in recent years due to economic pressures on housing and debt caused by the drought and the resultant reduction in farm production, such as cotton exports, and the flow on effects to the community.⁶² Note that data is unavailable for Warren.

⁶¹ Telephone interview with Spiritus Bush Nurse, Cecil Plains QLD, 05 December 2007.

⁶² Telephone interview with Diversity Counselling, Moree NSW, 05 December 2007.

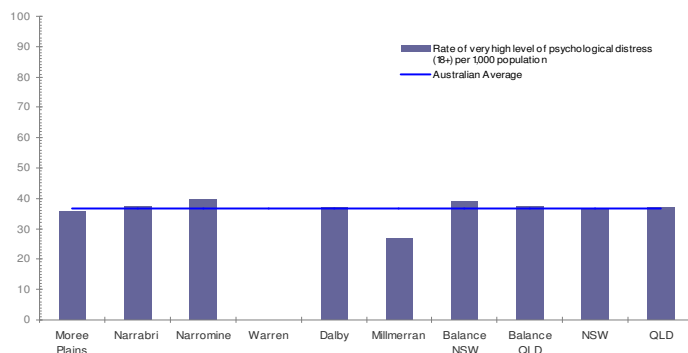


Figure 7.32: Rate of Very High Level of Psychological Distress (18+ yrs)

Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

7.21.3. Smokers

Across all the cotton communities, the rate of smoking among those aged 18 and over was higher than the state and national benchmarks. In particular, Moree Plains and Narromine had rates 15% higher than the Australian average at 295.1 and 293.4. Though the cotton communities are not substantially above the Balance NSW and Balance QLD values of 269.8 and 271.7 respectively.

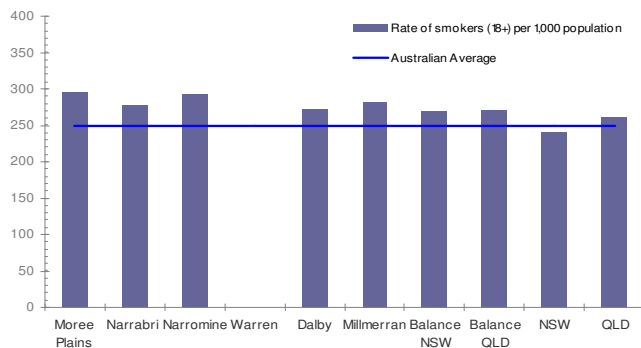


Figure 7.33: Rate of Smokers (18+ yrs) per 1,000 population

Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

7.21.4. Physical Inactivity

The rate of physical inactivity across the cotton communities was higher than the national and state benchmarks. The NSW communities also report higher rates than the Queensland towns. This trend mirrors the differences between the states with NSW higher than QLD. The rate in Moree Plains is highest of the cotton communities and 18.7% higher than the NSW average. Dalby had the lowest rate of the cotton towns, 9.5% higher than the Queensland average.



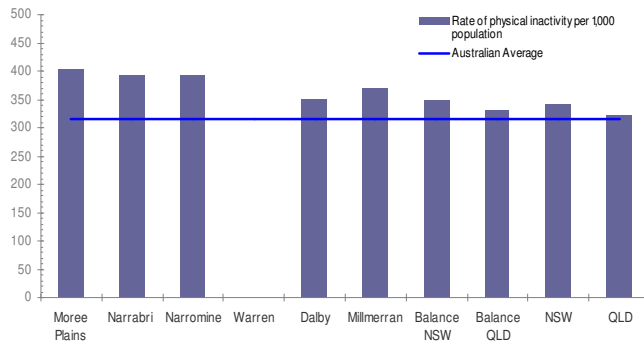


Figure 7.34: Rate of Physical Inactivity per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

7.21.5. High Health Risk Due to Alcohol Consumed

Again, the cotton communities had higher rates of health risk related to alcohol consumption than the national average. Moree Plains, Narrabri, and Narromine all had rates approximately 50% higher than the NSW average. Millmerran's rate is 32.5% higher than the Queensland average, while Dalby is 2.4% lower than the state average.

While data is unavailable for this indicator for Warren, consultation with local police suggests that easily accessible alcohol is a problem for the community.

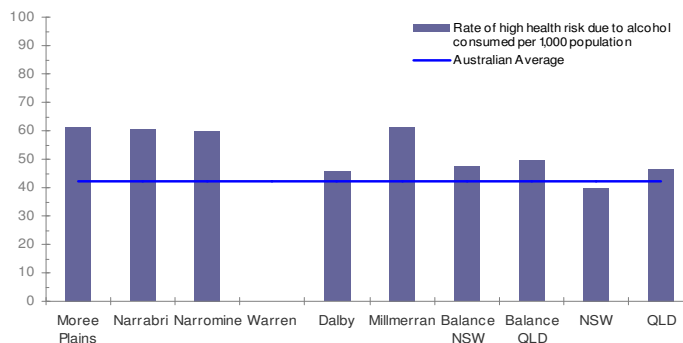


Figure 7.35: Rate of High Health Risk due to Alcohol Consumed per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

7.22. Premature Mortality

Premature mortality has been defined as death before the age of 75 years. We present rates for a selection of causes of premature mortality including circulatory system disease, cancer (all types), cancer (trachea, bronchus, lung), respiratory disease, overall injury and poisonings with subsets including suicide and motor vehicle deaths. This table shows a summary and comparison of these types of premature mortality for the cotton communities, state and national averages. Rates of premature mortality for circulatory



system disease, cancer (all types) and injury and poisonings particularly appear high for the cotton communities. The data obtained from PHIDU is based on data collected from 2000 to 2002, which was generally before the full impact of the drought was experienced. This may be of consideration when studying the rates of suicide, which some have attributed to the impact of the drought. These numbers presented here would not fully reflect that circumstance. Please note that some data is unavailable for certain conditions in certain locations due to very low numbers (0-4) reported, which appears to be more common for the communities with small populations. The data on total premature mortality for NSW in 2006 was recently released by the ABS. We include this information as well, though it must be noted that this rate is per 100,000 population of those 0-74 year, whilst the PHIDU rates are per 100,000 total population.

Table 7.8: Summary of Selected Causes of Premature Mortality (before age 75), Rate per 100,000 population

Specific Indicators (Per 100,000 population)	Moree Plains	Narrabri	Narramine	Warren	Dalby	Millmerran	Balance NSW	Balance QLD	NSW	QLD	Australia
Rate of circulatory system disease premature mortality	121.5	138.7	88.6	87.4	114.4	97	83.4	67.1	76.4	67.9	72.3
Rate of cancer (all types) premature mortality	123.8	147.8	128.2	140.4	95.8	102.7	119.2	106.8	113	109.6	114.3
• Rate of cancer (trachea, bronchus, lung) premature mortality	22.5	43.3	48.7	DNA	26.7	47.9	25.4	23.4	23.8	24.1	24
Rate of respiratory disease premature mortality	30.6	36.4	29.3	DNA	30.2	DNA	21.7	15.8	19.5	16.8	18.3
Rate of injury and poisoning premature mortality	74.2	68.3	28.1	67.5	33.9	DNA	39.5	42.6	31.6	37.3	35
• Rate of suicide premature mortality	29.3	15.8	DNA	DNA	DNA	DNA	14	16.3	11.2	14.5	12.6
• Rate of motor vehicle premature mortality	29.4	21.3	DNA	DNA	DNA	DNA	12.7	11.5	8.5	9.3	9.5
Total premature mortality rate (PHIDU 2005)	428.1	438.9	340.3	368.1	351.9	234.5	318.3	278.5	292.0	278.2	290.4
Total premature mortality rate NSW per 100,000 pop 0-74 (ABS 2007, Regional Statistics)	328	488	394	464	DNA	DNA	DNA	DNA	260	DNA	DNA

Source: PHIDU (2005) Population Health Profiles, Data obtained during 2000-02 period, By Statistical Local Area. ABS (2007) NSW Regional Statistics, Data from 2006. Note: DNA = Data not available



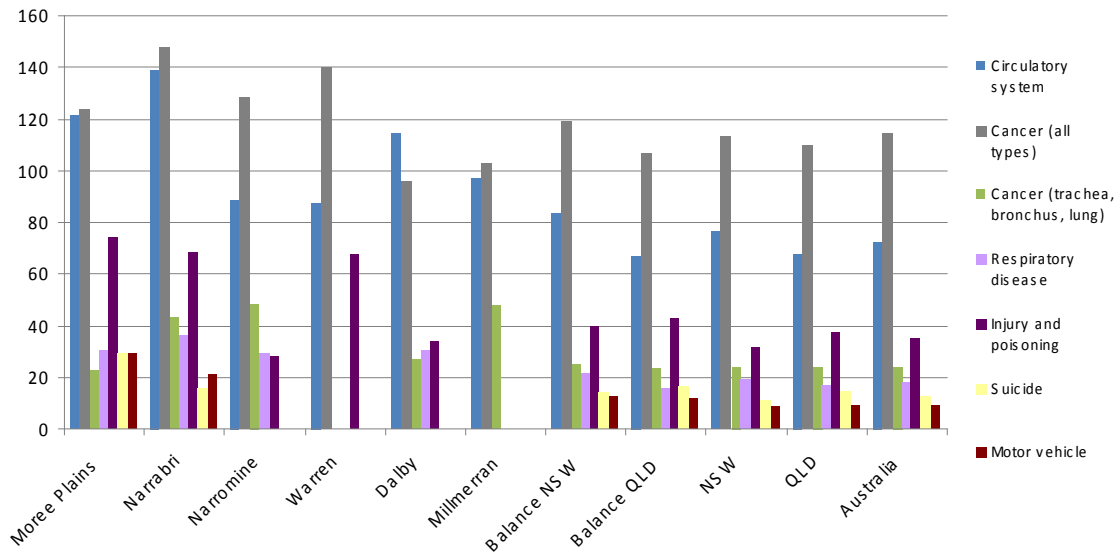


Figure 7.36: Causes of Premature Mortality Compared
 Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period, By Statistical Local Area

7.22.1. Total Premature Mortality Rate

This graph shows the total premature mortality rate per 100,000 population based on data collected from 2001 to 2002. All of the cotton LGAs, except for Millmerran, rate above the national and state averages. Moree Plains and Narrabri have the highest rates of premature death of all the cotton LGAs. Millmerran has the lowest rate, which is well below the state and national benchmarks.

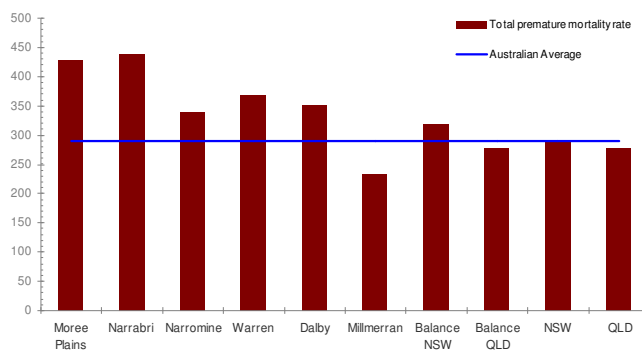


Figure 7.37: Total Premature Mortality Rate per 100,000 population
 Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period, By Statistical Local Area

7.22.2. Circulatory System Disease

In general, the rate of circulatory system disease resulting in premature death is higher in the cotton communities than across all other benchmark areas. Circulatory system diseases include coronary heart disease, cerebrovascular accident or stroke, hypertension and rheumatic heart disease.⁶³ The rates for Warren and Narromine are comparable with Balance NSW and Balance QLD as well as the State averages. Narrabri had the highest rate of any cotton community of 138.7 per 100,000 population, which is approximately 81.5% higher than the NSW average of 76.4. Moree Plains had a rate 59% higher than the NSW average. Dalby also recorded a high rate at 68.5% higher than the Queensland average.

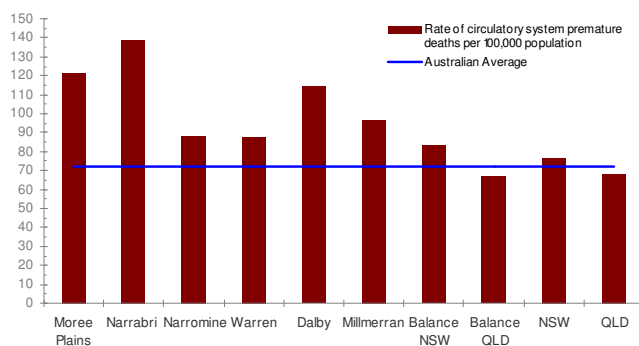


Figure 7.38: Premature Mortality – Circulatory System Disease

Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period, By Statistical Local Area

7.22.3. Cancer (All Types)

The rate of premature death due to cancer (all types) is higher amongst the NSW communities than the national average, while the Queensland towns fall below it. Narrabri had the highest rate at 147.8 per 100,000 persons, which is 30.8% higher than the NSW average of 113 per 100,000 persons. Dalby had the lowest rate at 95.8 per 100,000 population, -12.6% below the Queensland average.

Consultation with the Community Health Centre in Narromine supported the findings of higher than average rates of cancer stating that the cancer rates have always seemed high in the area.⁶⁴

⁶³ AIHW (1993) *Trends in Australian Mortality: Disease of the Circulatory System 1950-1991*, Mortality Series No. 2.

⁶⁴ Telephone interview with Narromine Community Health Centre representative, 30 November 2007.

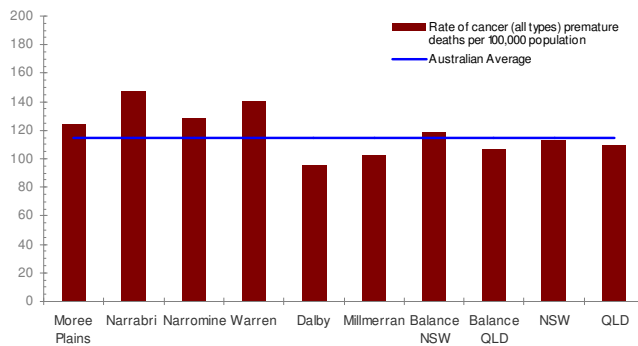


Figure 7.39: Premature Mortality – Cancer (all types)
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period, By Statistical Local Area

7.22.4. Cancer of the Trachea, Bronchus and Lung

Narromine, Millmerran Shire, and Narrabri had significantly higher rates of cancer of the trachea, bronchus and lung compared to the state and national average. The rate in Narromine was 104.6% higher than the NSW benchmark, while Millmerran was 98.8% higher than the QLD benchmark. In comparison, Dalby and Moree Plains had similar rates to the national average, with Moree Plains –5.5% lower than the NSW benchmark.

Concern has been expressed about the relationship between cotton and the rate of cancer and lung cancer, due to the chemicals that have been used and some that continue to be used.⁶⁵

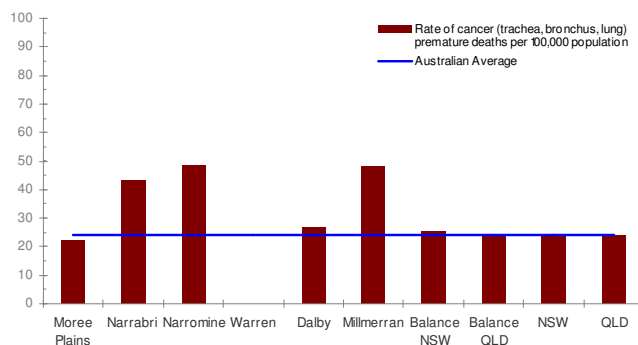


Figure 7.40: Premature Mortality – Cancer (trachea, bronchus, lung)
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period, By Statistical Local Area

7.22.5. Respiratory System Diseases

Respiratory system diseases include conditions such as emphysema, cystic fibrosis, chronic obstructive pulmonary disorder, and asthma. Where data is available, the rates of respiratory diseases resulting in premature death are significantly higher than the equivalent state and national rates. Narrabri, Moree Plains and Narromine all had rates more than 50% higher than the NSW. Narrabri was actually 86.7%

⁶⁵ Telephone interview with Warren Land Council representative, 04 December 2007.



higher than the state average (which is itself higher than the national average). Dalby too had a rate 80% higher than the QLD average. Unfortunately, data was not available for Warren or Millmerran.

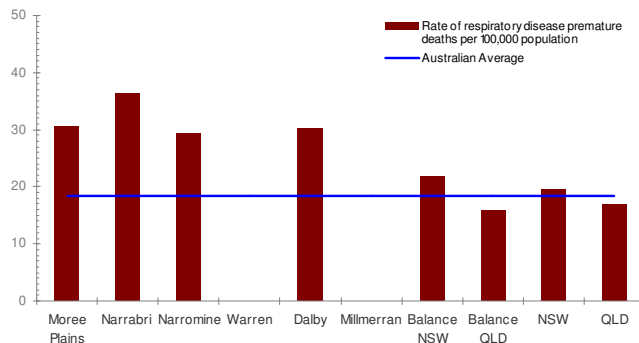


Figure 7.41: Premature Mortality – Respiratory Disease
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period

7.22.6. Injuries and Poisonings

The NSW communities of Narrabri, Moree Plains and Warren have significantly higher rates of injuries and poisonings resulting in premature death than either the equivalent state or national rates. In particular, Moree Plains had a rate of 74.2, which is approximately 134% higher than the NSW average. Narrabri and Warren both reported rates that double the NSW average. Narromine and Dalby were the only cotton communities with comparable rates to the state and national rates for injuries and poisonings. Narromine recorded the lowest rate of 28.1, which was -11.1% lower than the NSW average. Premature death due to injuries and poisonings include both suicide and motor vehicle deaths, the following sections look at these two causes of death separately.

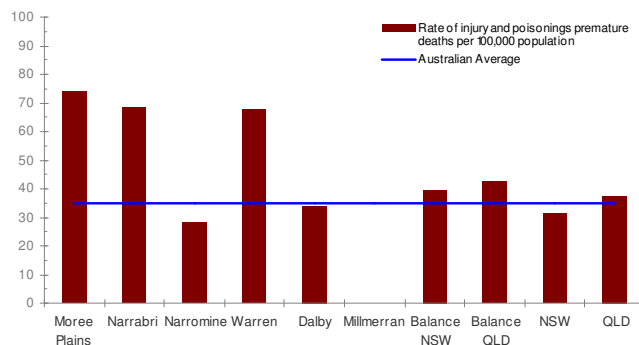


Figure 7.42: Premature Mortality – Injuries and Poisonings
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period

7.22.7. Suicide

During the period between 2000-2002, thirteen residents of Moree Plains SLA committed suicide, giving Moree Plains a rate of premature death from suicide well above the state and national averages. Of the





data available, Moree Plains was the SLA with the 4th highest suicide rate in NSW. Narrabri also had relatively high rate of suicide at 15.8, approximately 41% higher than the NSW average.

It will be useful to track any changes in these rates since the worsening of the drought since this data was collected.

Complete data was unavailable for Narromine, Warren, Dalby and Millmerran due to the small number of reported incidents (between 0-4).

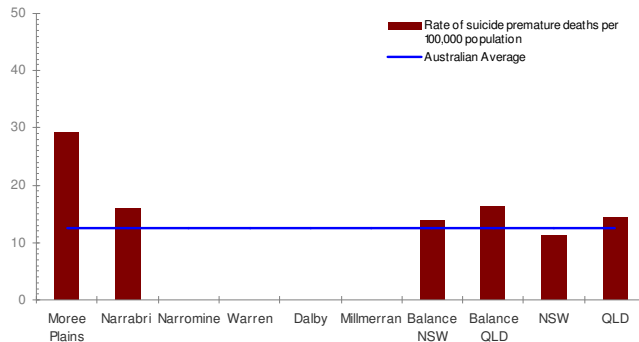


Figure 7.43: Premature Deaths - Suicide
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period

7.22.8. Motor Vehicle Accidents

Rates of premature death due to motor vehicle accidents were staggeringly high for Moree Plains and Narrabri SLAs during the 2001-02 period. Moree Plains reported a rate 245.9% higher than the NSW average and 131.5% higher than Balance NSW. Narrabri was 150.6% higher than NSW and 67.7% higher than Balance NSW. High rates of motor vehicle premature deaths may be due to high speed limits, animals on the roadways, and possibly alcohol related offences.

The rates for Moree Plains and Narrabri are among some of the highest in NSW. Of the data available, they rank 11th and 17th respectively. These values are closer to rates reported in the Northern Territory than in any of the other states. Complete data was unavailable for Narromine, Warren, Dalby and Millmerran due to the small number of reported incidents (between 0-4).

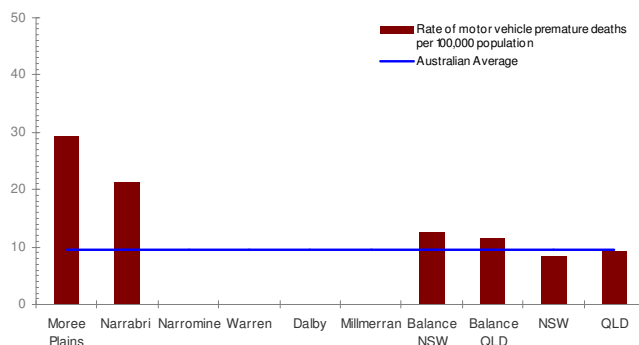


Figure 7.44: Premature Deaths – Motor Vehicle Accidents
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period



7.23. Chronic Diseases

Chronic diseases are those that persist across time and require some level of health care management.⁶⁶ We have included four indicators in this category including asthma, Type 2 diabetes, mental and behavioural disorders and chronic musculoskeletal diseases. The following table and graph provide a summary and comparison for these indicators across all towns, state and national benchmarks.

Table 7.9: Summary of Selected Chronic Health Issues – Rates per 1,000 population

Specific Indicators (Per 1,000 population)	Moree Plains	Narrabri	Narromine	Warren	Dalby	Millmerran	Balance				
							NSW	QLD	NSWQLD	Australia	
Rate of asthma	125.6	131.2	131.1	DNA	123.4	112.7	127.9	118.2	114.0	121.5	118.2
Rate of Type 2 diabetes	17.4	19.8	18.4	DNA	23.2	15.4	23.4	21.9	24.4	22.6	23.4
Rate of mental and behavioural disorders	88.8	87.4	90.8	DNA	108.2	83.2	104.3	97.7	96.5	99.0	97.8
Rate of chronic musculoskeletal disease	326.0	336.1	338.2	DNA	356.7	360.8	322.0	343.5	304.9	341.5	326.3

Source: PHIDU (2005) Population Health Profile, Data obtained 2001
Note: DNA = Data not available

7.23.1. Chronic Disease Rate Comparison

This graph shows a comparison between the rates of chronic disease per 1,000 population. The purpose of this graph is to illustrate the difference between the rates for different conditions. Note that the rate of chronic musculoskeletal disease is much higher overall than the other conditions reported here. The pattern appears to be replicated across the cotton communities, the states and nationally.

⁶⁶ PHIDU (2005) Population health profile of the Barwon Division of General Practice. Population Profile Series: No. 29. Public Health Information Development Unit (PHIDU), Adelaide. Citing, World Health Organisation (2002). The World Health Report 2002: Reducing Risks, Promoting Healthy Life. Geneva: World Health Organisation.



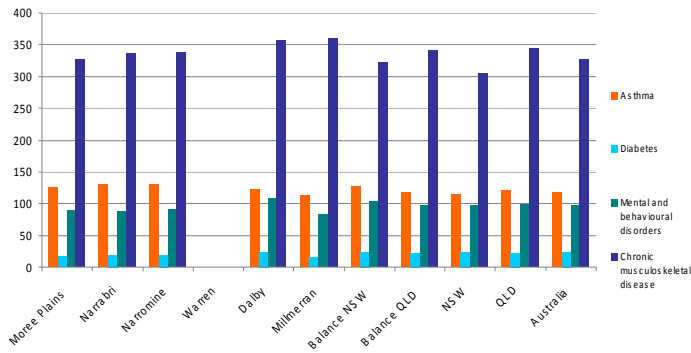


Figure 7.45: Chronic Disease Rate Comparison
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001

7.23.2. Estimates of Chronic Disease Index

The estimates of chronic disease index is derived from the sum of the rates per 1,000 population for 5 selected conditions including:

- Respiratory system diseases
- Circulatory system diseases
- Type 2 Diabetes
- Mental and behavioural disorders
- Musculoskeletal system diseases

Note that data was not available for Warren.

Dalby appears to have a much higher incidence of chronic disease compared with the other cotton communities. Moree Plains reported the lowest index value. The following sections look at a selection of chronic disease conditions in more detail.

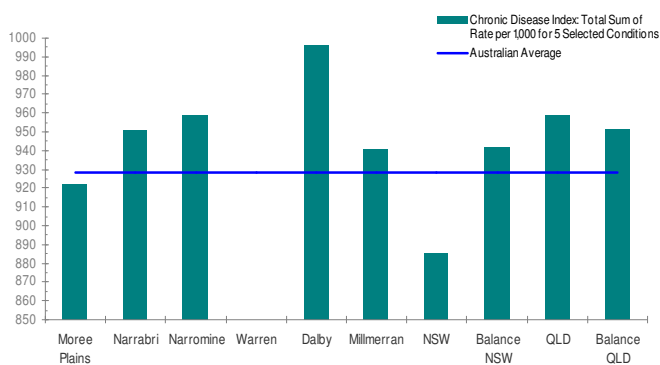


Figure 7.46: Chronic Disease Index
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001

7.23.3. Asthma

Across the cotton communities, the rate of chronic asthma is slightly elevated compared with the state and national rates. However, 'Balance NSW' also has a rate of asthma that is higher than the national average. Narrabri and Narromine have rates that are approximately 15% higher than the NSW average. Millmerran reported the lowest rate at 112.7, -7.2% lower than the Queensland value.

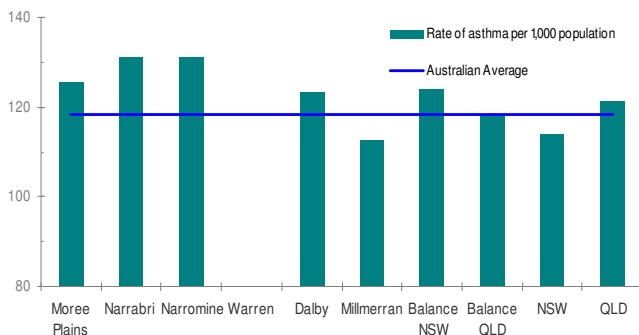


Figure 7.47: Rate of Asthma per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001

7.23.4. Type 2 Diabetes

In general, the cotton communities appear to have a lower incidence of diabetes compared to NSW, QLD and Australia. Dalby is the only area reporting a comparable rate of Type 2 diabetes to the national average. Millmerran had the lowest rate at 15.4, -31.9% lower than the Queensland benchmark.

However, the experience of at least one community health centre amongst the cotton communities does not necessarily support these findings. In their view the rates of diabetes in their community was increasing and quite high.⁶⁷ It is worth tracking this indicator over time when more recent data is available.

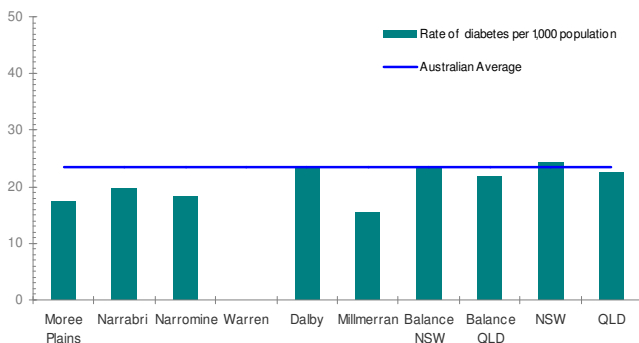


Figure 7.48: Rate of Type 2 Diabetes per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001

⁶⁷ Telephone interview with Narromine Community Health Centre representative, 30 November 2007.



7.23.5. Mental and Behavioural Disorders

All of the cotton communities with the exception of Dalby had a lower reported rate of mental and behavioural disorders than the state and national benchmarks. Moree Plains, Narrabri, Narromine and Millmerran all had quite comparable rates. Dalby reported the highest rate of 108.2, 9.3% above the Queensland average, while Millmerran reported the lowest rate of 83.2, -16% below the state average.

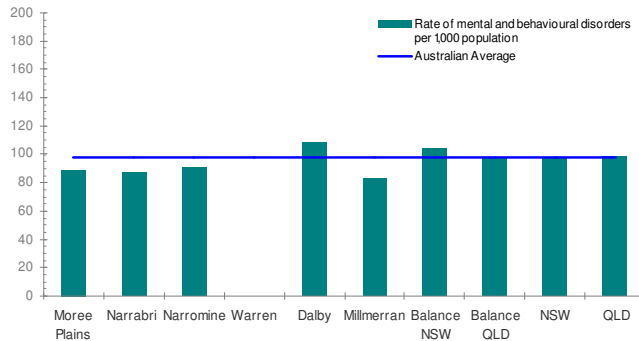


Figure 7.49: Rate of Mental and Behavioural Disorders per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001 period

7.23.6. Musculoskeletal Diseases

Chronic musculoskeletal diseases include arthritis, osteoarthritis and rheumatoid arthritis. The rates vary across the cotton communities, ranging from 326 in Moree Plains to 396.7 in Dalby per 1,000 population. The rate for Moree Plains is higher than the NSW rate but comparable to the Australian rate of 326.3. Queensland has a higher rate than both NSW and Australia. Dalby and Millmerran both had rates above the national and state average, 4.5% and 5.7% higher than the Queensland average respectively.

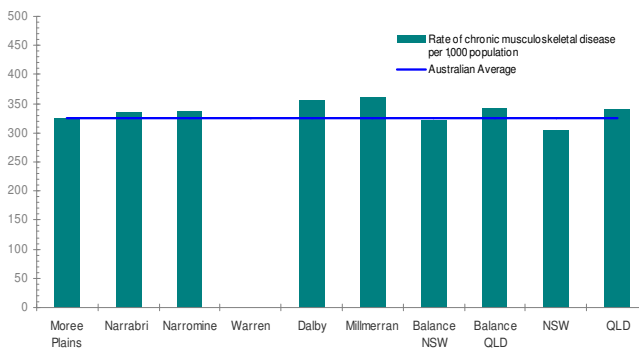


Figure 7.50: Rate of Chronic Musculoskeletal Diseases per 1,000 population
Source: PHIDU (2005) Population Health Profiles, Data obtained in 2001-02 period



7.24. Aged Care Packages

The table below provides information about how well the cotton areas are serviced for aged care packages. While the areas appear to be well catered for across the low and high care packages, there are some gaps that require further investigation. The lack of CACPs for the NSW cotton LGAs is interesting, perhaps these areas are being serviced elsewhere? Or perhaps the data is inaccurate? The lack of high care packages operating in Millmerran is also interesting and worthy of follow up. The data presented here refers to operational places and does not include approved places that may not yet be operational.

Table 7.10: Rate of Aged Care Packages per 1,000 population

	Rate of Community Aged Care Packages (CACP) per 1,000 population	Rate of low care packages per 1,000 population	Rate of high care packages per 1,000 population
Moree Plains	0	42.0	44.2
Narrabri	0	48.8	46.5
Narromine	0	84.3	11.8
Warren	0	72.7	36.4
Dalby	18.6	41.2	82.5
Millmerran	28.6	114.3	0
Normative Standard for Regional areas	25 per 1,000 persons aged 70+	44 per 1,000 persons aged 70+	44 per 1,000 persons aged 70+

Source: Australian Government Department of Health and Ageing (June 2007).

7.25. Property Related Crime

This set of indicators measure the rate of reported property related crime experienced by residents including rate of car theft, theft from a retail store, steal from dwelling, and malicious damage to property. While the data presented in this table includes both NSW and QLD communities, it is not possible to compare between the two states as the data that is available from each state is different. The data from NSW is available for crimes reported in 2006, while the Queensland data for these areas is only available for the 2002 to 2003 period. Also note that the Pittsworth and Millmerran LGA areas are combined for the crime statistics.





Table 7.11: Summary of selected property crime rates (per 100,000)

	Moree Plains	Narrabri	Narromine	Warren	Dalby	Pittsworth/ Millmerran	NSW	QLD
Rate of car theft	652.6	218.7	355.5	152.8	915	176	417.8	1176
Rate of theft from retail store	326.3	148.2	142.2	488.8	167	25	264.9	407
Rate of steal from dwelling	571.0	592.7	440.8	672.2	349	25	353.6	223
Rate of malicious damage to property	3746.2	2067.5	1791.6	2169.3	DNA	DNA	1594.2	DNA

Source: NSW BOCSAR (2007) and Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

We have conducted telephone interviews with representatives from the local area commands in each cotton community. Being a small community was identified as both a positive and negative by the Cecil Plains police station. Due to the small size of the community, a few individuals committing crimes can have a very large impact on the community. On the other hand, there is very little theft observed due to the vigilance and close-knit nature of the town – ‘if something gets stolen everyone knows!’⁶⁸

7.25.1. Car Theft

The rate of car theft is generally lower across the cotton communities, except for Moree Plains, than the NSW average. In particular, Narrabri and Warren have rates that are significantly below the NSW average. Dalby and Millmerran/Pittsworth also have lower rates of car theft than the state average. Moree Plains, in comparison has a significantly higher rate of 652.6, approximately 56.2% higher than NSW. The Moree Police Crime Manager stated that the number of car thefts might appear high because attempts are also counted as theft, such that if a car window is smashed the incident will be classified as a theft. The Crime Manager also expressed that much of the theft and property damage is attributable to juveniles, often extending from domestic violence situations at home.⁶⁹

⁶⁸ Telephone interview with Cecil Plains Police Station Officer in Charge, 30 November 2007.

⁶⁹ Telephone interview with Moree Police Crime Manager, 03 December 2007.

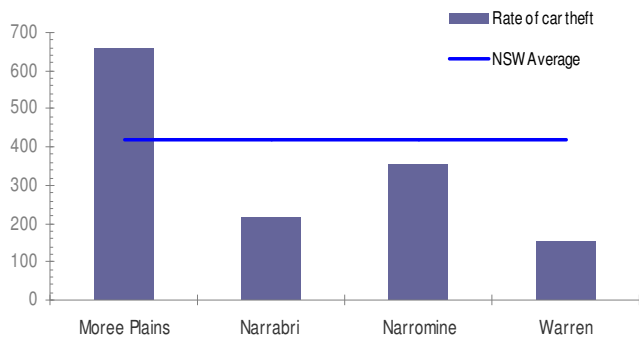


Figure 7.51: Rate of car theft per 100,000 population – NSW
Source: Source: NSW BOCSAR (2007)

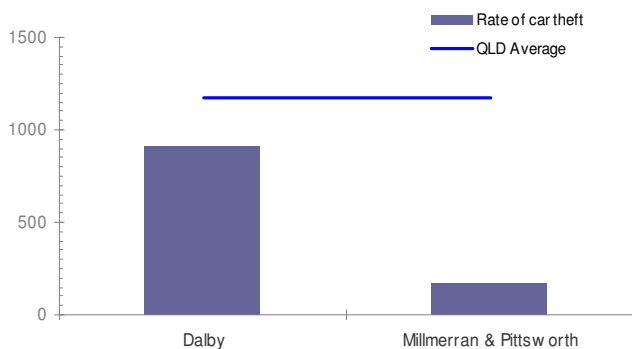


Figure 7.52: Rate of car theft per 100,000 population – QLD
Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.25.2. Theft from Retail Store

The rate of theft from a retail store in the NSW cotton communities is variable with Narrabri and Narromine having the lowest rates, more than 44% below the NSW average. In contrast, Warren (488.8) and Moree Plains (326.3) have significantly higher rates than NSW. Warren's rate of theft from a retail store is 84.5% higher than the state average. By contrast, both Dalby and Pittsworth/Millmerran had rates well below the Queensland average.

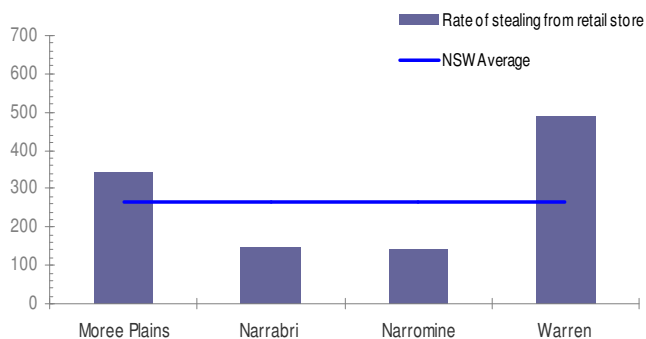




Figure 7.53: Rate of theft from retail store per 100,000 population – NSW
Source: Source: NSW BOCSAR (2007)

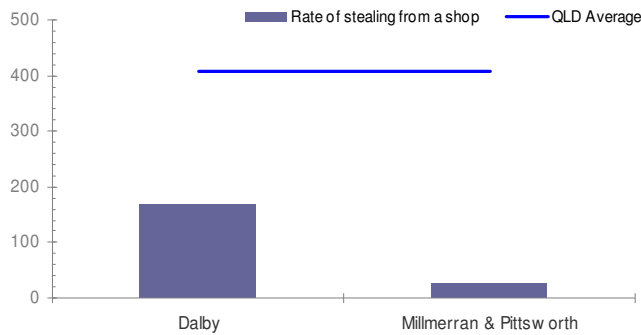


Figure 7.54: Rate of theft from retail store per 100,000 population – QLD
Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.25.3. Steal from Dwelling

The rates for steal from dwelling across the NSW cotton communities are significantly higher than the NSW average of 353.6. Warren had a rate of 672.2, 90% higher than NSW. Narrabri and Moree Plains both had rates that were more than 61.5% higher than the state average. Likewise, Dalby reported a high rate of steal from dwelling compared to the state average. However, rates for Pittsworth/Millmerran were substantially below the state average. It would be interesting to see if this difference between the two QLD areas has continued since 2002-03. The Warren Police Station reported that alcohol fuels much of crime in the community. The combination of unemployment, young people with little to do, and easy access to alcohol all contribute to the higher rates of crime in the area.⁷⁰

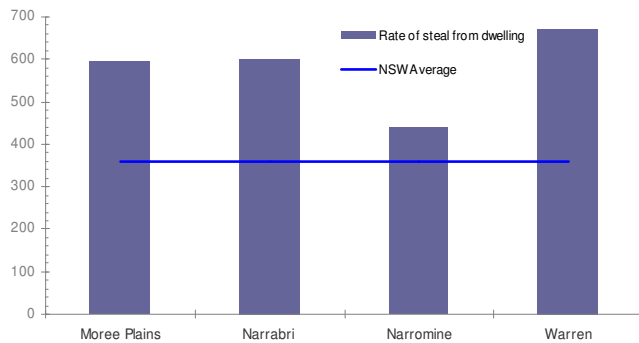


Figure 7.55: Rate of steal from dwelling per 100,000 population – NSW
Source: Source: NSW BOCSAR (2007)

⁷⁰ Telephone interview with Warren Police Station Acting Sergeant, 29 November 2007.

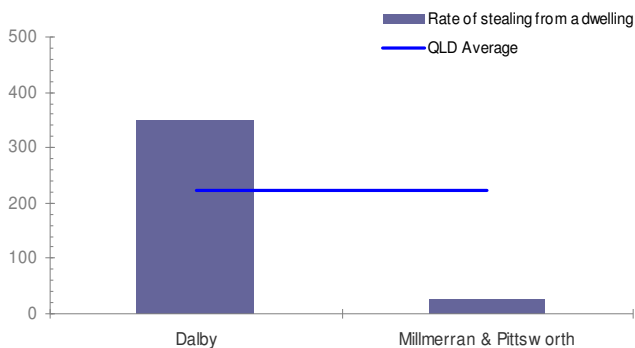


Figure 7.56: Rate of steal from dwelling per 100,000 population – QLD
 Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.25.4. Malicious Damage to Property

In general, the rates of malicious damage to property in the cotton communities were higher than the NSW rate. Moree Plains had the highest rate of 3746.2, 135% higher than the NSW average. Warren and Narrabri had rates more than 29.7% higher than the NSW average. Narromine had a comparable (albeit slightly higher) rate to NSW at 1791.6.

Queensland data was not available for the indicator.

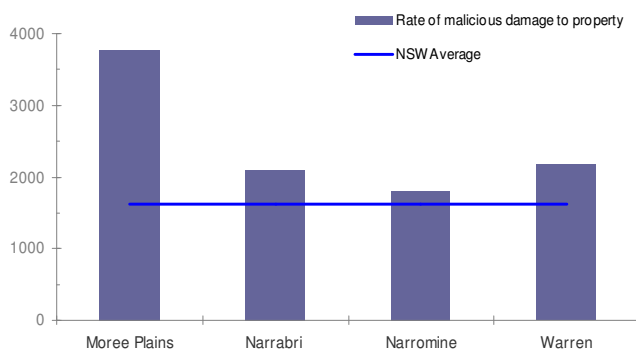


Figure 7.57: Rate of malicious damage to property per 100,000 population – NSW
 Source: NSW BOCSAR (2007)

7.26. Personal Crime

We have chosen to look at domestic and non-domestic assault and sexual offences as indicators of personal crime. Crime statistics are recorded differently in QLD than in NSW and do not allow for easy comparison. For example, assault in QLD is not divided into either domestic or non-domestic as in NSW, but rather as ‘serious’ and ‘other’ assault. Despite these differences in reporting, the data presented here can still be tracked over time as more up to date information becomes available.



Table 7.12: Summary of selected property crime rates per 100,000 population

	Moree Plains	Narrabri	Narromine	Warren	Dalby	Pittsworth/ Millmerran	NSW	QLD
Rate of assault (non-domestic)	1775.9	1016.1	1137.5	1222.1	719.0	139.0	660.7	530.0
Rate of assault domestic	1311.5	748.0	526.1	1252.7	DNA	DNA	392.9	DNA
Rate of sexual offences	238.5	197.5	241.7	183.4	138.0	49.0	136.6	169.0
Total Personal Crime Rate	3325.9	1961.6	1905.3	2658.2	-	-	1190.2	-

Source: NSW BOSCAR (2007) and Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.26.1. Assault NSW

The NSW cotton communities are all well above the state average for non-domestic and domestic assault rates. Moree Plains has an exceptionally high rate of non-domestic and domestic assault - 234% above the NSW average. Likewise, Warren has a very high rate of domestic assault more than 219% higher than the NSW rate.

Moree Police Station cites domestic violence as its #1 priority, as much of the crime in the community extends from this core issue. The police highlight the issue of unemployment, use of alcohol and drugs, plus the higher incidence of domestic violence among the Aboriginal population as the leading causes for the high rates of assault in the area.⁷¹

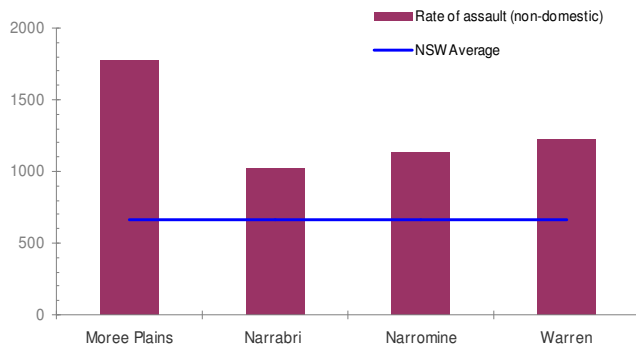


Figure 7.58: Rate of assault (non-domestic) per 100,000 population – NSW
Source: NSW BOSCAR (2007)

⁷¹ Telephone interview with Moree Police Station Crime Manager, 03 December 2007.

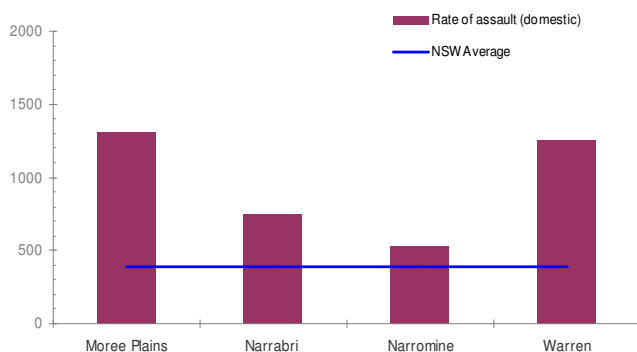


Figure 7.59: Rate of domestic assault per 100,000 population – NSW
Source: NSW BOCSAR (2007)

7.26.2. Assault QLD

Rates of both serious and other assaults were much higher in Dalby compared with Millmerran/Pittsworth during the 2002-03 period.

Serious assault may include assaulting a police officer in the execution of duty, assaulting a person aged 60 or over, and assaulting a person who relies on a guide dog, wheelchair or other remedial device.

Again, it would be interesting to track whether this difference between the two areas has continued as a trend since the 2002-03 period.

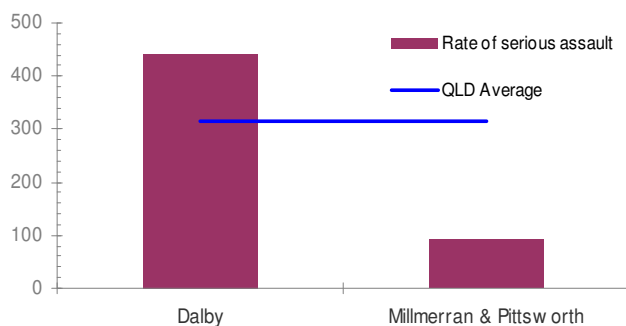


Figure 7.60: Rate of serious assault per 100,000 population – QLD
Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

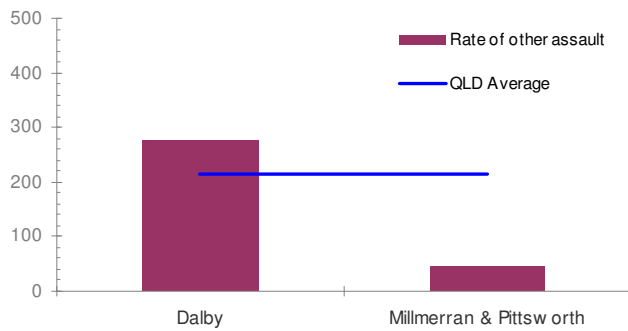


Figure 7.61: Rate of other assault per 100,000 population – QLD
Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.26.3. Sexual Assault

The rate of sexual assault amongst the NSW cotton communities are all well above the state average of 136.6. Narromine had the highest rate at 241.7, which is 77% higher than the state average. Warren had the lowest rate at 183.4, still 34.3% higher than the state average.

On the other hand, the rates of sexual offences in Dalby and Millmerran/Pittsworth were both below the Queensland average of 169.

Again, it is not possible to compare between the two states due to the different time periods represented here.

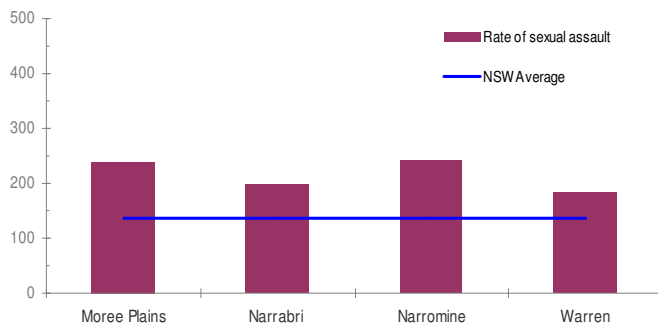


Figure 7.62: Rate of sexual assault per 100,000 population – NSW
Source: NSW BOCSAR (2007)

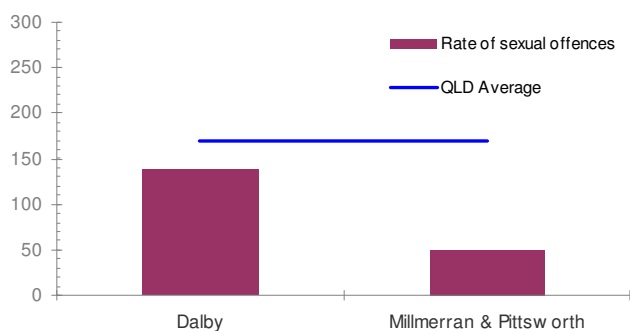


Figure 7.63: Rate of sexual offences per 100,000 population – QLD
 Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.26.4. Drug Related Offences

The rate of drug related offences is much higher in Moree Plains and Narrabri compared with the other NSW cotton communities. Moree Plains reports the highest rate at 552.3, which is 61.3% higher than the NSW average of 342.3. Narramine reported the lowest rate at 99.5, which is -70.9% below the state average. So there are some drastic differences between the reported drug related offences in the NSW cotton communities.

Dalby reported a rate pretty much equal to the state average, while Millmerran/Pittsworth was -33.9% below the state average of 1019.

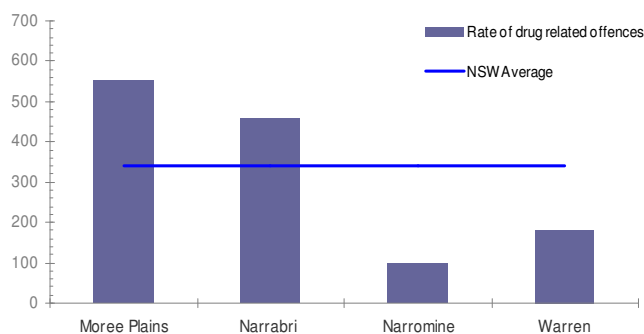


Figure 7.64: Rate of drug related offences per 100,000 population – NSW
 Source: NSW BOCSAR (2007)

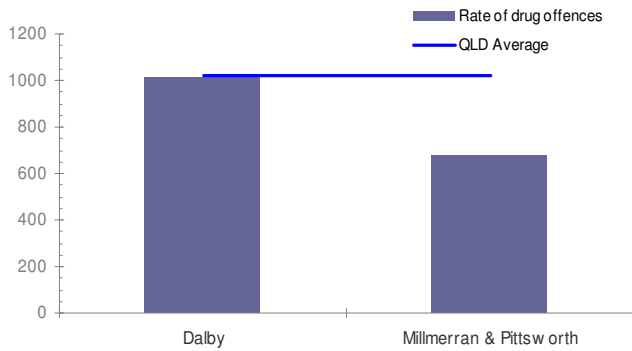


Figure 7.65: Rate of drug related offences per 100,000 population – QLD
Source: Crime Statistics Unit, Office of Economic and Statistical Research (2003) Small Area Crime Profiles, Data 2002-03.

7.27. Volunteerism

The cotton communities all report much higher rates of voluntary work for an organisation or group compared to national and state benchmarks. Warren and Millmerran had the highest rates of volunteering for an organisation or group at 29.1% and 28.5% of 2006 population respectively.

This is consistent with the positive response regarding the willingness of community members surveyed to engage in community life in general and in activities that benefit the wider community (see Community Survey results below).

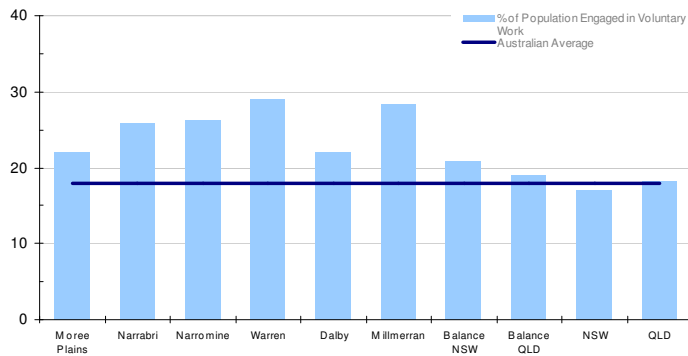


Figure 7.67: % of Population Engaged in Voluntary Work for an Organisation
Source: ABS (2006) Census of Population and Housing



8. Community Survey Results

A survey of residents of the Cotton Communities was conducted during November and December 2007. The Community Survey sought to gain an understanding of community sentiment with regard to the overall wellbeing of the community. Community views related to the cotton industry were also investigated.

8.1. Methodology

8.1.1. Overview

The telephone survey was conducted by Judith Stubbs & Associates between the hours of 2pm to 8pm Monday to Friday. The time period for conducting calls was chosen to increase the likelihood of contacting residents of working age, who may be more likely to be at home during these hours. Using Telstra's *White Pages*, 100 residences were chosen at random to be a part of the survey, with 30 interviews conducted for each of the cotton communities. Each interviewee was instructed as to the purpose of the research and how the findings might be utilised. All interviewees and their responses were treated confidentially. Therefore, no names or contact details are used in this report. Each interview consisted of structured questions lasting approximately 10 minutes.

Results were recorded onto paper and then entered into an Excel database. The structured questionnaire used as part of the interview process has been included as **Appendix C**.

8.1.2. Limitations

The number of surveys that could be conducted was limited by the scope of the project. Given the small size of the sample, conclusions are unlikely to be robust. However, levels of confidence can be calculated are likely to be reasonable where a particular value is highly represented.⁷²

The findings here are meant as a guide for conducting more in-depth research, and have been used as a rough gauge of community sentiment. They augment our understanding of the community gained from the range of indicators explored through the desktop study reported above.

8.2. Basic Demographic Profile of Respondents

A few general questions were asked to gain an understanding of the basic characteristics of the respondents. These included age, gender and Aboriginal and Torres Strait Islander origin.

⁷² e.g. where the response to a question is 80% for one answer, one could be 95% confident for Narrabri that the true value lay between 65% and 95%.





8.2.1. Gender

Overall the majority of survey respondents were female. Narrabri and Warren Shire were the only areas to have a proportional gender response rate. The remaining towns all had a much higher proportion of female respondents. This was likely to be due to the higher prevalence of women not in the labour force either at home caring or working in un-paid domestic work.

Females are often be more likely to participate in a telephone survey of this nature compared to males.

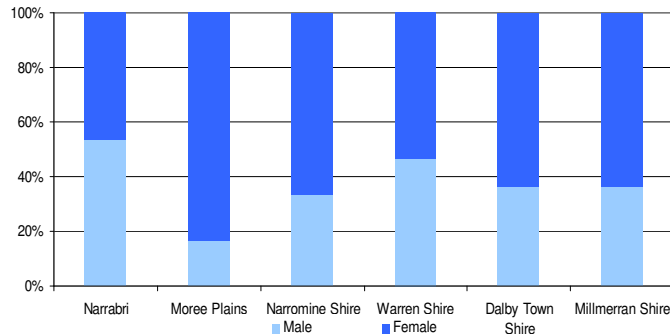


Figure 8.1: Gender of Community Survey Respondents
Source: JSA 2007

8.2.2. Age

In general, the majority of respondents were aged 55+ years of age, with the exception of Dalby Town Shire. Narrabri, Narromine, Dalby and Millmerran all had greater than 50% of respondents aged less than 55 years. The higher than average response rate of older residents is mainly due to them being more likely to be at home during the calling hours, and more time due to having less responsibility for childcare and the like, which meant they were more willing to undertake the survey.

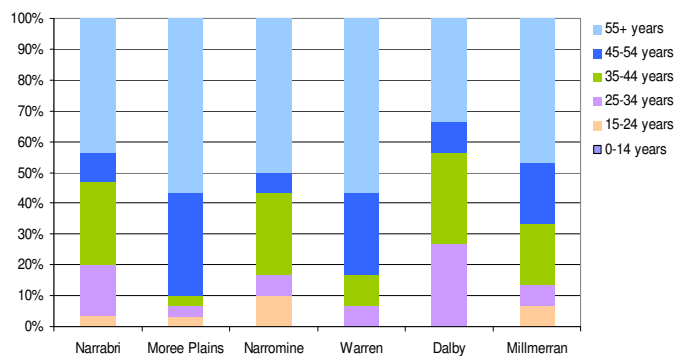


Figure 8.2: Age of Community Survey Respondents
Source: JSA 2007

8.2.3. Indigenous Status

An effort was made to capture responses from local Indigenous residents. Respondents were asked “are you from an Aboriginal and Torres Strait Islander background?” with only one respondent indicating that there from such a background.

8.3. Survey Findings

8.3.1. Time Lived in the Community

The majority of respondents had resided in the same LGA for more than 25 years, which is not surprising given the age of respondents noted above. Narrabri, Moree Plains and Narromine all had higher proportion of respondents residing in the community for between 10 and 19 years. Dalby and Narromine were the only cotton communities where respondents reporting living elsewhere during the previous two years.

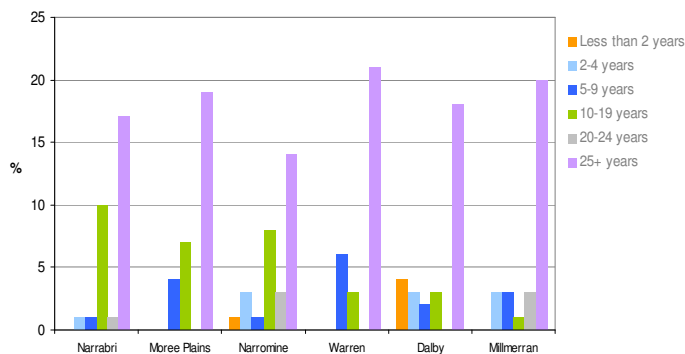


Figure 8.3: Time Lived in the Community
Source: JSA 2007

8.3.2. Work Related to the Cotton Industry

Respondents were asked whether their work is directly related to the cotton industry. The majority of respondents’ work did not directly relate to the cotton industry. However, the towns of Narrabri, Moree Plains, Warren and Millmerran Shire had rates of relationship to the cotton industry that appear to be higher than the actual proportional share of employment by the industry in these areas. This may be due to the increased willingness of respondents employed in cotton related fields to undertake the survey due to their knowledge of and interest in the industry.

Of those who indicated their work related directly to the cotton industry, respondents were asked to further describe their work. Interestingly, the survey managed to pick up a cross section of workers from cotton related industries including cotton farmers, cotton hands, gin workers, sprayers, labourers, and welders at various cotton gins.

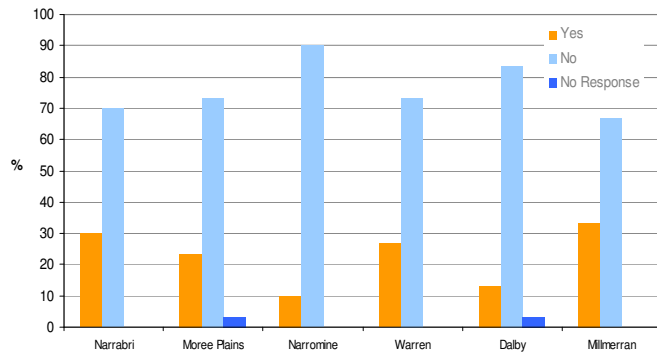


Figure 8.4: Is Your Work Related to the Cotton Industry?
Source: JSA 2007

8.3.3. Quality of Life

Current Sentiment

Respondents were asked about the quality of life they experienced in their local community currently and notable changes in recent times in their LGA. Respondents were asked what they liked most and disliked most about living in their LGA. The table opposite details what respondents mentioned they like most about living in their community. A high number of respondents mentioned ‘people and friends’, and ‘rural /country lifestyle’ as what they like most about living in the area. Respondents were allowed to give multiple responses, as such the number of responses adds up to more than 30.

Table 8.1: What Do You Like Most About Living in Your Area?

	Narrabri	Moree Plains	Narromine	Warren	Dalby	Millmerran	Total
<i>People, friends</i>	20	16	20	17	10	6	89
<i>Rural/ Country Lifestyle</i>	5	5	10	16	17	23	76
<i>Feels like home</i>	2	6	1	2	4	3	18
<i>Employment opportunities</i>	5	2	1	1	0	1	10
<i>Proximity to larger regional centre</i>	0	1	3	1	3	1	9
<i>Environment</i>	2	0	0	0	0	1	3
<i>Close to family or relatives</i>	1	2	0	0	0	0	3
<i>Good future</i>	1	1	0	0	0	0	2
<i>Access to Services e.g. hospitals and schools</i>	0	2	0	0	0	0	2
<i>Things to do and see</i>	1	0	0	0	0	0	1
<i>Water</i>	0	1	0	0	0	0	1
<i>Cost of living</i>	0	0	0	0	0	0	0

Source: JSA 2007

Respondents were then asked, “overall, do you feel more positive (happy) or negative (unhappy) about living in the LGA at the moment?” Interviewees were asked to respond on a 5-point scale ranging from very positive to very negative.

The graph and corresponding table below provide a breakdown of respondents’ feelings, with the raw numbers included to allow more careful analysis. In general, all cotton communities had a high proportion of respondents who were either very positive or positive about living in their community. This ranged

from 73% in Moree Plains to 93% in Narrabri and Millmerran Shire. Respondents in all of the cotton communities had very low levels of dissatisfaction about life in their community.

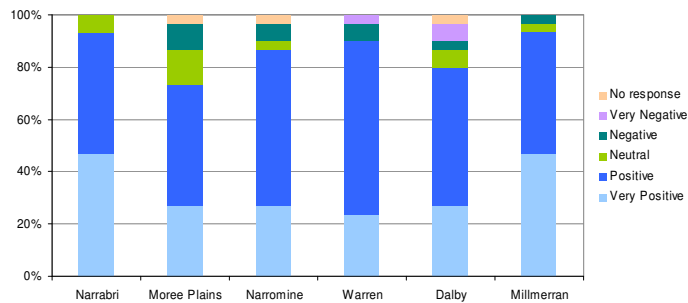


Figure 8.5: Satisfaction with Life in Community at the Moment
Source: JSA 2007

Sentiment Change Over Time

Also important to this research is the change in the perceived quality of life over time. Respondents were asked about how life had changed from one year ago and 5 years ago. Narrabri and Millmerran had the highest rates (greater than 60%) of respondents indicating that life in the LGA had ‘stayed the same’. These two towns had correspondingly higher rates of respondents indicating that the quality of life had improved since a year ago. By comparison Dalby had the highest proportion of respondents indicating life had improved in the last year, which was mainly attributed to the opening of the new coalmines in the area. This was reported to have increased employment and wages, with new retail businesses locating themselves in Dalby. These new mines were also thought to bring in new people, invigorating the town with ‘new ideas’.

Warren had the highest rate of negative associations of change in quality of life over time, with 95% of respondents indicating that life had gotten worse in the past year. Warren respondents mainly attributed this to the effects of the drought, with most expressing concern about the high number of people moving out of the area, and the impact on business closures and the general vitality of the town.

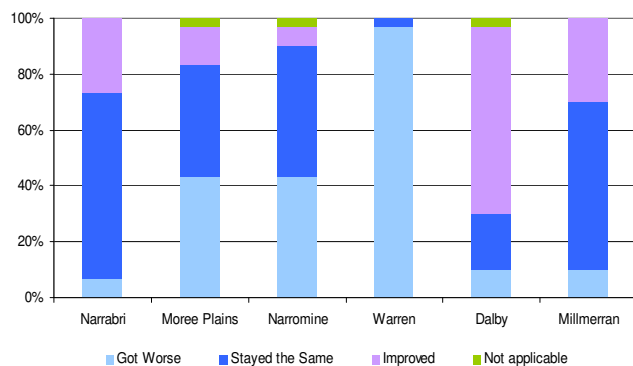


Figure 8.6: In the Past Year How Has Life Changed in Your Area?
Source: JSA 2007



By comparison, a higher proportion of respondents indicated that life had improved during the preceding five years. Narrabri had the highest level of perceived improvements in the quality of life in the last five years, which was attributed to the increased business vitality in the township due to the new mines and a gas plant opening. Moree Plains and Narromine were quite similar in sentiment about changes to life in the past five years, as were Dalby and Millmerran respondents. Warren, on the other hand, reported quite negative sentiment such that the majority of respondents indicated that life had gotten worse in the last five years. Again, these feelings are largely attributed to the impact of the drought on the area.

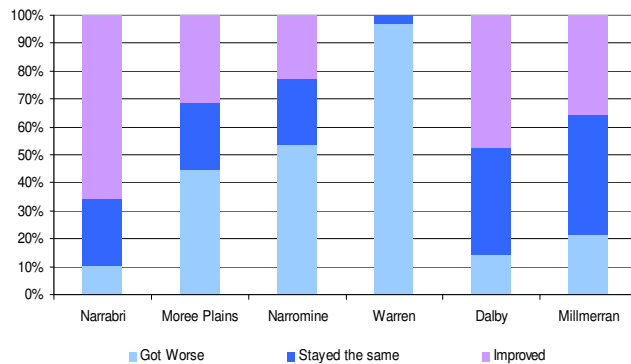


Figure 8.7: In the Past 5 Years, How Has Life Changed in Your Area?
Source: JSA 2007

8.3.4. Social Cohesion & Social Capital

Respondents were asked to state their level of agreement with a series of statements. The statements selected are designed to provide insight in to the level of social capital or social cohesion that exists in a community. While there are a wide range of possible statements that could be put to respondents, we chose a small sample to investigate neighbourliness, community engagement, and feelings of community safety. These in part accord with the Buckner dimensions discussed above.

Neighbourliness

The following table details the responses received regarding neighbourliness or sense of belonging. The first statement, “overall, I feel attached to living in this area” can be interpreted as being either a ‘linkage to both the physical land and people of that community’ or a sense of ‘home’. The second statement, “I feel like I belong to this area”, can be interpreted as ‘the level of inclusiveness’ and reinforces the previous statement of the level of ‘attachment’ to an area. In general, the majority of residents strongly agreed or agreed to these two statements, and very few disagreed or strongly disagreed. In particular, Narrabri’s respondents had a much higher rate (approximately 100%) of attachment and belonging to their community – based on reports of ‘strongly agree’ and ‘agree’ with the statements.



Table 8.2: Neighbourliness

		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>Overall, I feel attached to living in this area</i>	Narrabri	19	63%	10	33%	1	3%	0	0%	0	0%	0	0%
	Moree Plains	9	30%	15	50%	1	3%	4	13%	0	0%	1	3%
	Narrromine	12	40%	16	53%	0	0%	1	3%	0	0%	1	3%
	Warren	8	27%	22	73%	0	0%	0	0%	0	0%	0	0%
	Dalby	8	27%	17	57%	0	0%	4	13%	1	3%	0	0%
	Millmerran	16	53%	11	37%	1	3%	1	3%	0	0%	1	3%
<i>I feel like I belong to this area</i>	Narrabri	20	67%	8	27%	2	7%	0	0%	0	0%	0	0%
	Moree Plains	10	33%	13	43%	1	3%	5	17%	0	0%	1	3%
	Narrromine	12	40%	14	47%	0	0%	3	10%	0	0%	1	3%
	Warren	11	37%	15	50%	0	0%	4	13%	0	0%	0	0%
	Dalby	6	20%	17	57%	0	0%	7	23%	0	0%	0	0%
	Millmerran	18	60%	8	27%	2	7%	1	3%	0	0%	1	3%
<i>I visit my neighbours in their homes</i>	Narrabri	15	50%	15	50%	0	0%	0	0%	0	0%	0	0%
	Moree Plains	8	27%	14	47%	1	3%	4	13%	2	7%	1	3%
	Narrromine	10	33%	17	57%	0	0%	2	7%	0	0%	1	3%
	Warren	1	3%	29	97%	0	0%	0	0%	0	0%	0	0%
	Dalby	5	17%	13	43%	0	0%	10	33%	2	7%	0	0%
	Millmerran	10	33%	18	60%	0	0%	1	3%	0	0%	1	3%
<i>I regularly stop and chat with people in my area</i>	Narrabri	16	53%	14	47%	0	0%	0	0%	0	0%	0	0%
	Moree Plains	14	47%	11	37%	0	0%	3	10%	1	3%	1	3%
	Narrromine	11	37%	17	57%	0	0%	1	3%	0	0%	1	3%
	Warren	11	37%	19	63%	0	0%	0	0%	0	0%	0	0%
	Dalby	8	27%	13	43%	3	10%	4	13%	2	7%	0	0%
	Millmerran	10	33%	17	57%	0	0%	2	7%	0	0%	1	3%

Source: JSA 2007

Statement three and four differ slightly by attempting to gauge the level of interaction and friendliness to people immediately surrounding them (neighbours) and others in-town (extra immediate). Again, the cotton communities reported strong levels of interaction with neighbours and others in the community. In particular, Narrabri had the highest level of interaction. Dalby also had a higher level of residents disagreeing or strongly disagreeing with these statements.

Community Engagement

The following three statements have been designed to assess the level of community engagement across the cotton communities. Statement five, “I would be willing to work together with others on something to improve my area”, may be interpreted as the level of ‘co-operation amongst community members’, or ‘sense of pride in my area’.

Across the cotton communities, there was a high level of agreement for willingness to work with others on something to benefit the community, support community events, and conserve water or electricity if required.





Table 8.3: Community Engagement

		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I would be willing to work together with others on something</i>	Narrabri	15	50%	14	47%	0	0%	1	3%	0	0%	0	0%
	Moree Plains	9	30%	17	57%	1	3%	1	3%	1	3%	1	3%
	Narromine	10	33%	15	50%	1	3%	2	7%	1	3%	1	3%
	Warren	4	13%	26	87%	0	0%	0	0%	0	0%	0	0%
	Dalby	2	7%	20	67%	3	10%	3	10%	2	7%	0	0%
	Millmerran	10	33%	16	53%	1	3%	2	7%	0	0%	1	3%
		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel that there is good local support for community events.</i>	Narrabri	12	40%	16	53%	1	3%	1	3%	0	0%	0	0%
	Moree Plains	8	27%	9	30%	2	7%	8	27%	2	7%	1	3%
	Narromine	9	30%	18	60%	1	3%	1	3%	0	0%	1	3%
	Warren	6	20%	21	70%	0	0%	3	10%	0	0%	0	0%
	Dalby	4	13%	17	57%	3	10%	4	13%	2	7%	0	0%
	Millmerran	7	23%	12	40%	0	0%	10	33%	0	0%	1	3%
		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel that people in my neighbourhood would conserve water</i>	Narrabri	14	47%	15	50%	0	0%	1	3%	0	0%	0	0%
	Moree Plains	3	10%	14	47%	3	10%	7	23%	2	7%	1	3%
	Narromine	5	17%	19	63%	0	0%	4	13%	1	3%	1	3%
	Warren	5	17%	18	60%	0	0%	7	23%	0	0%	0	0%
	Dalby	5	17%	17	57%	2	7%	5	17%	1	3%	0	0%
	Millmerran	9	30%	15	50%	1	3%	4	13%	0	0%	1	3%

Source: JSA 2007

Community Safety

The final statements investigated respondents' feelings of safety and security in their home and community. Respondents were asked how safe they felt in their home and in their local area during both the day and night. In general, the majority of people interviewed felt safe or very safe both in their home and local area during the day. Narrabri residents again topped the cotton communities for feeling the safest at home and in their local area during the day.

The results regarding feelings of safety at night, both in the home and in the neighbourhood, differed to that of the previous results. Of all the respondents, Narrabri and Millmerran had the highest rates of feeling safe at night at home. While respondents from Moree Plains, Narromine, and Dalby had the highest rates of feeling unsafe at home, accounting for 44% of respondents in Moree Plains, and 37% for both Narromine and Dalby. The findings were similar across all towns with regard to feelings of safety when walking around the local area at night. Moree Plains, Narromine, Warren, Dalby all had very low levels of agreement to the statement for feeling safe at night in their locality, with more than two-thirds of respondents indicating that they 'disagree' or 'strongly disagree' with the statements. Narrabri and Millmerran had significantly higher levels of agreement with statements about feeling safe whilst walking in their neighbourhoods at night.



Table 8.4: Community Safety

		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel safe when I am alone in my home during the day</i>	Narrabri	22	73%	8	27%	0	0%	0	0%	0	0%	0	0%
	Moree Plains	8	27%	17	57%	0	0%	3	10%	1	3%	1	3%
	Narrromine	10	33%	18	60%	0	0%	1	3%	0	0%	1	3%
	Warren	7	23%	22	73%	0	0%	1	3%	0	0%	0	0%
	Dalby	3	10%	26	87%	0	0%	1	3%	0	0%	0	0%
	Millmerran	19	63%	10	33%	0	0%	0	0%	0	0%	1	3%
		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel safe walking around my area during the day</i>	Narrabri	23	77%	7	23%	0	0%	0	0%	0	0%	0	0%
	Moree Plains	6	20%	20	67%	0	0%	3	10%	0	0%	1	3%
	Narrromine	11	37%	17	57%	0	0%	1	3%	0	0%	1	3%
	Warren	7	23%	23	77%	0	0%	0	0%	0	0%	0	0%
	Dalby	2	7%	27	90%	0	0%	0	0%	1	3%	0	0%
	Millmerran	20	67%	9	30%	0	0%	0	0%	0	0%	1	3%
		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel safe when I am alone in my home at night</i>	Narrabri	16	53%	12	40%	0	0%	2	7%	0	0%	0	0%
	Moree Plains	2	7%	14	47%	0	0%	8	27%	5	17%	1	3%
	Narrromine	4	13%	14	47%	0	0%	11	37%	0	0%	1	3%
	Warren	2	7%	22	73%	0	0%	5	17%	1	3%	0	0%
	Dalby	2	7%	17	57%	0	0%	11	37%	0	0%	0	0%
	Millmerran	16	53%	12	40%	1	3%	0	0%	0	0%	1	3%
		Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Strongly Disagree		No Response	
<i>I feel safe walking around my area during the night</i>	Narrabri	7	23%	11	37%	1	3%	9	30%	2	7%	0	0%
	Moree Plains	0	0%	1	3%	0	0%	15	50%	13	43%	1	3%
	Narrromine	2	7%	5	17%	0	0%	8	27%	14	47%	1	3%
	Warren	2	7%	7	23%	0	0%	9	30%	12	40%	0	0%
	Dalby	1	3%	7	23%	1	3%	14	47%	7	23%	0	0%
	Millmerran	12	40%	13	43%	1	3%	3	10%	0	0%	1	3%

Source: JSA 2007

8.3.5. Impact of the Cotton Industry on the Community

Positive Impacts

Respondents were asked about their views on the impact of the cotton industry on their community. Again, respondents were allowed to provide multiple responses. The table below provides a breakdown of the stated *positive* effects of the cotton industry on their community. In general, employment by the cotton industry was the single largest positive impact mentioned by respondents. This was followed by the ‘flow-on’ effects of employment through increased retail spending in the towns and a general increase in vitality of towns. Other positive impacts attributed to the cotton industry include support for community activities, a growing community through the attraction of workers and related businesses to the area. Six respondents from Dalby mentioned the annual Australian Cotton Week Festival as a positive impact.

Table 8.5: Positive Impacts of the Cotton Industry on the Community

	Narrabri	Moree Plains	Narrromine	Warren	Dalby	Millmerran
Jobs/Employment	28	22	24	22	17	25
Flow-on Effects to local economy e.g. increased business spending	6	5	2	9	4	4
Research into Environmental Effects	1	-	-	-	-	-
Community Support	2	1	-	-	1	1
Growth of Community	4	1	1	1	1	1
Tourism	1	-	-	-	-	-
Cotton Week	-	-	-	-	6	-

Source: JSA 2007





Negative Impacts

The following table provides a breakdown of the negative impacts of the cotton industry provided by those surveyed. Universally, respondents thought water consumption and chemical spraying were the most negative aspects of the industry and its practices on their communities. This included perceptions regarding inefficient water use by farmers, inefficient water allocations, and theft of water. Chemical spraying was thought to contribute to adverse health impacts and asthma related illnesses.

Each cotton community also had differing negative impacts. Cotton farming was thought to damage the river in Narrabri and Dalby, whilst respondents in Moree Plains and Warren held views that the negative impacts are on the environment more generally. Nearly half of Millmerran respondents mentioned chemical spraying as a negative impact of the industry. The causes and validity of this sentiment could perhaps warrant additional research.

Table 8.6: Negative Impacts of the Cotton Industry on the Community

	Narrabri	Moree Plains	Narromine	Warren	Dalby	Millmerran
Water consumption	8	6	9	7	9	8
Damage to the River	5	1	0	0	6	2
Damage to the Land	1	0	0	0	0	0
Environment	1	6	4	8	0	1
Land Clearing	1	0	0	2	0	0
Chemical Spraying	2	4	7	5	5	14
Health Concerns	1	0	2	2	0	2
Too close to town	2	0	0	1	0	1

Source: JSA 2007

Overall Impact

This table represents the overall impact of the cotton industry expressed by the respondents from each cotton community. There was a general consensus that the cotton industry overall has a more positive than negative impact on the communities.

Narrabri respondents overwhelmingly reported that the overall impact of the industry is more positive than negative, with 100% of respondents indicating so. Warren had the largest proportion of respondents indicating that the overall impact of the industry is negative at 23%. Dalby, on the other hand, had the highest level of uncertainty about the impact of the industry on the community at 27%.

Figure 8.8: Impact of Cotton Industry on the Community – More Positive or More Negative?

	Narrabri	Moree Plains	Narromine	Warren	Dalby	Millmerran
More Positive	100%	80%	77%	73%	60%	80%
More Negative	0%	13%	10%	23%	13%	3%
Not Sure	0%	3%	10%	0%	27%	13%
No Response	0%	3%	3%	3%	0%	3%

Source: JSA 2007



9. Business Survey Results

Local businesses were selected through Yellow Pages™ searches of specified business types for participation in a mail out survey looking at the wellbeing and vitality of the business sectors in the cotton communities. If possible, approximately 100 businesses were targeted for each community. Warren and Cecil Plains were limited to 50 businesses, as that is the amount of businesses listed for these locations. Businesses selected were mainly town businesses including retail, financial, and other services. Where possible, farming businesses surrounding the town were targeted. Businesses were selected based on their location within the LGAs primary town such as Narrabri, Moree, or Narromine. Where more than 100 businesses were found, duplicate business types were selectively deleted with the aim of representing the variety of businesses from each community. A two-page survey was mailed out with an accompanying explanatory letter (**Appendix B**) with a stamped and self-addressed return envelope. A relatively small number of surveys were returned to sender as “No longer at this address”.

9.1. Response Rate

23 surveys were completed for Narrabri on-site when the research team was in town for a site visit. This was completed prior to the mailing of the business surveys to the other communities. The figure below shows the response rate for each community. The rate of return for the towns that were mailed the survey is relatively similar, ranging mainly from 11 to 14% returned. Warren had the highest rate of return at 21%. The 10% of surveys ‘returned to sender’ from the Moree sample must be noted, as this undoubtedly impacted on the response rate for this group. We wonder if this is the result of many businesses going out of business recently, or some other factor.

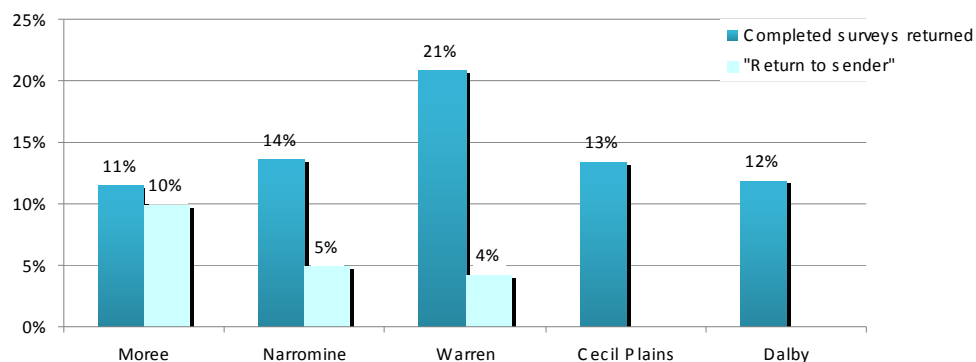


Figure 9.1: Percentage of surveys returned by town
Source: JSA 2007





Surveys from Agriculture, Forestry & Fishing businesses and retail businesses had the highest response rates at 28% and 27% respectively.

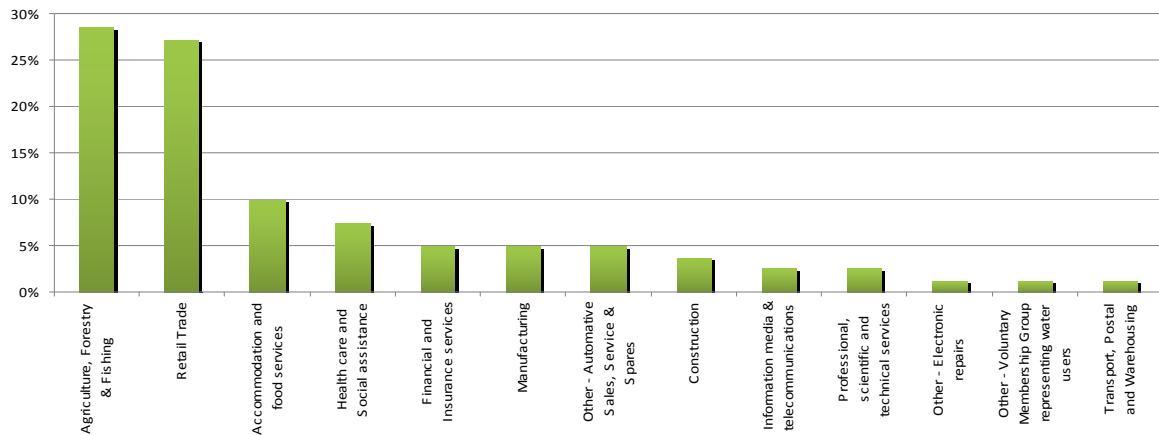


Figure 9.2: Percentage of surveys returned by industry
Source: JSA 2007

9.2. Employees

Local businesses were asked about the number of employees they had working for them and the status of that employment, whether it was full time or part time and whether or not the employment needs changed throughout the year. Generally, respondents report that the number of employees stays the same during the year – though there are some differences reported.

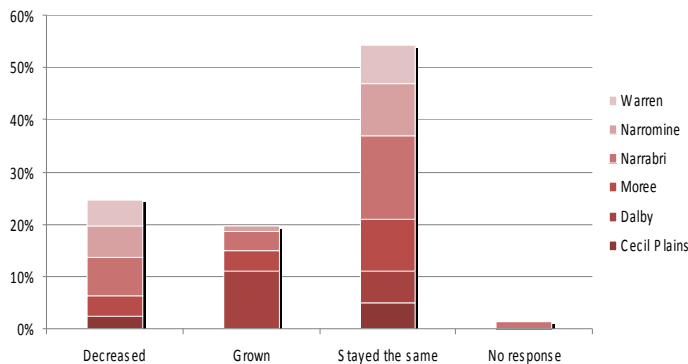


Figure 9.3: How the total number of employees has changed throughout the year.
Source: JSA 2007

9.2.1. Full-time employees

Figure 9.4 below shows that the majority of local businesses who completed the survey are very small businesses, with between 1 and 5 employees. Those respondents from Warren were all small businesses with between 1 to 5 employees. Figure 9.5 shows that overwhelmingly for those businesses that responded, the number of full time employees required does change throughout the year.

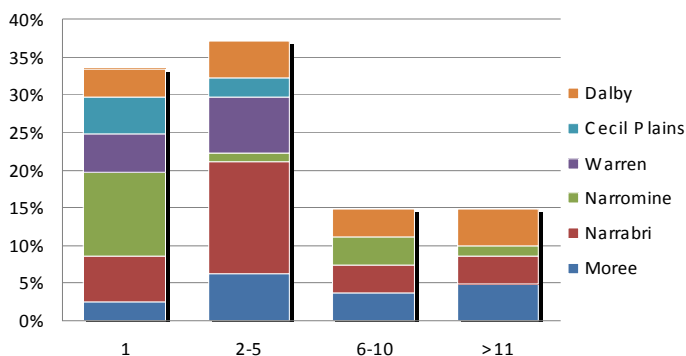


Figure 9.4: Full-time employees by town
Source: JSA 2007

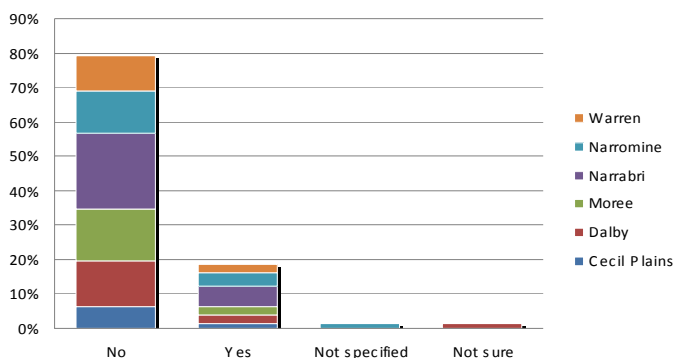


Figure 9.5: Full-time employees change during the year?
Source: JSA 2007

Of those (n=15) who indicated that the number of full-time employees varies throughout the year, the primary reasons for the changes included: demand, sowing and harvesting requirements, the need for seasonal contract workers, impacts of the drought; and the need to add staff for either the end of the financial year, Christmas and other busy periods.

9.2.2. Part-time employees

Likewise, the majority of businesses have small numbers of part-time employees as well – mainly less than 5 part-time employees. Most of the towns reported that the number of part-time employees does not change during the year. Though respondents from Moree did seem to have a higher rate of change amongst part-time employees compared to the other communities. The majority (54%) of businesses replied that the number of employees, both full & part-time stayed the same throughout the year. 25% of businesses responded that the number of employees had decreased and 20% of the businesses had increased the number of employees.

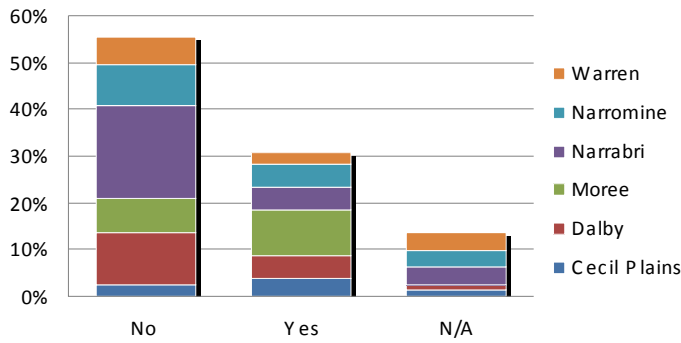


Figure 9.7: Part-time employees changing during the year
Source: JSA 2007

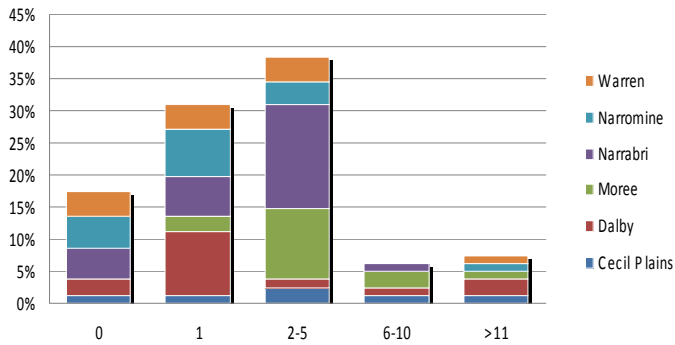


Figure 9.6: Part-time employees by town
Source: JSA 2007

9.2.3. Retaining Skilled Employees

For many rural and regional businesses attracting and retaining skilled employees can be a tremendous issue. Figure 9.8 shows that while 43% of the respondents reported that they have trouble attracting or retaining skilled employees to their business, 41% responded that they did not have any trouble. Businesses in the agriculture, forestry and fishing industries report having the most trouble attracting and retaining skilled workers, while businesses in retail report having the least amount of trouble.

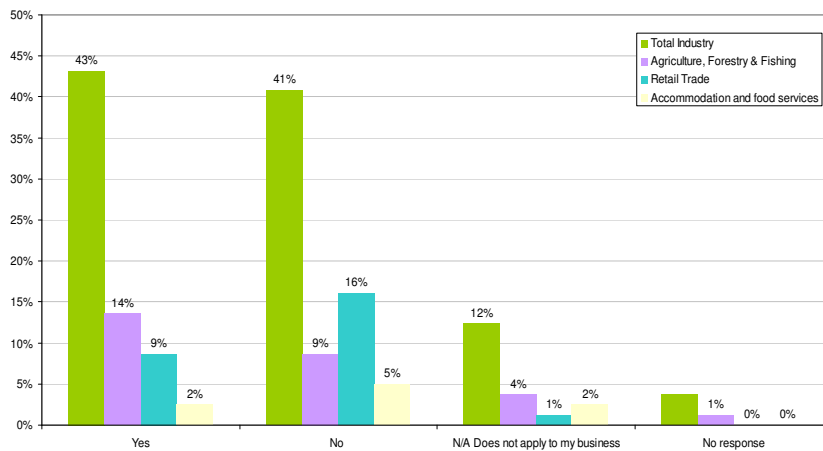


Figure 9.8: Trouble attracting or retaining skilled employees
Source: JSA 2007

9.2.4. Employment Vacancies

68% of respondents reported no current employment vacancies, while 28% did report having current vacancies. Businesses in Narrabri seem to have the least amount of vacancies.

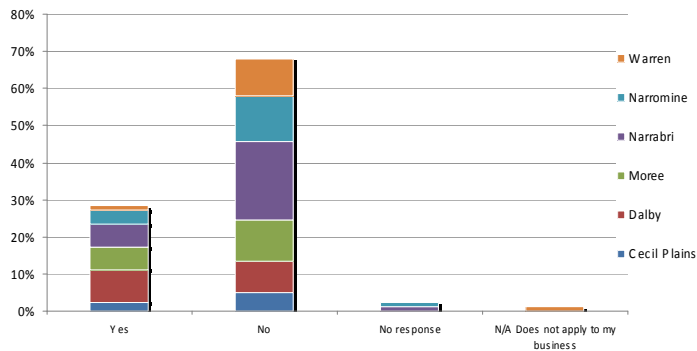


Figure 9.9: Current vacancies in employment by town
Source: JSA 2007

Of the 23 businesses with vacancies, 15 had 1 position vacant. Businesses with 1 position vacant were primarily agriculture, forestry and fishing or retail businesses. Figure 9.10 shows that Dalby and Narrabri had the highest number of businesses reporting that they had 1 position vacant at 5 and 4 respectively.



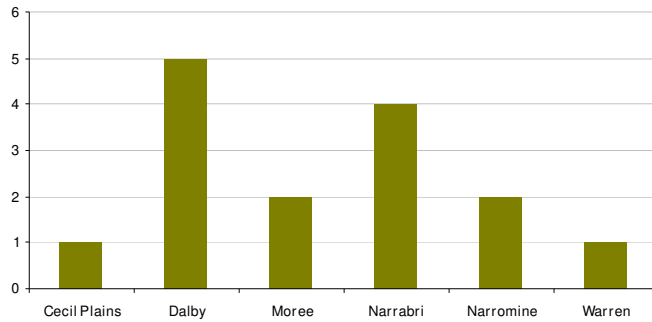


Figure 9.10: Number of businesses with 1 position vacant by town
Source: JSA 2007

Seven businesses reported having 2 to 5 current vacancies, two of which were manufacturing businesses. 3 of the businesses were in Moree.

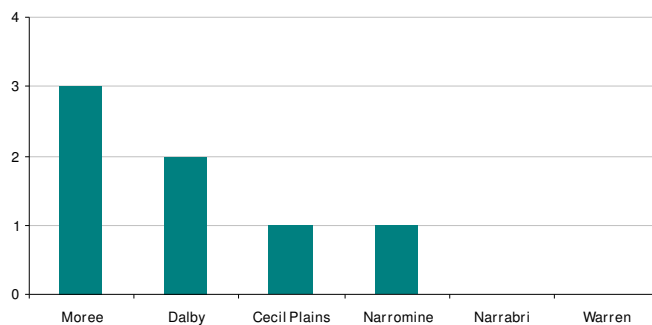


Figure 9.11: Businesses with 2-5 positions vacant by town
Source: JSA 2007

Reasons for Current Vacancies

The table below provides a summary of the reasons reported by businesses for their current employment vacancies. The difficulty attracting and retaining skilled workers, compounded by competition from the mining sector, are key reasons for the current vacancies reported.

Table 9.1: Responses on reasons for current vacancies

Industry	What do you think is the main reason for your current vacancies?	Previous employee leaving	Skills shortage	Business growth	Gone to other industries	Other
Construction	1 x illness, 1 x accident	1				
Agriculture, Forestry & Fishing	Business growth and a good season			1		
Agriculture, Forestry & Fishing	Drought- workers have gone mining: more money				1	
Professional, scientific and technical services	Future planning for maternity leave & staff movement	1				
Agriculture,	Growth			1		



Industry	What do you think is the main reason for your current vacancies?	Previous employee leaving	Skills shortage	Business growth	Gone to other industries	Other
Forestry & Fishing				1		
Health care and Social assistance	Hard to fill positions		1			
Agriculture, Forestry & Fishing	Hard to find good staff, competing against mines		1			
Manufacturing	Have trouble attracting them because they do not exist		1			
Agriculture, Forestry & Fishing	Knowledge		1			
Other - Automotive Sales, Service & Spares	Mining boom				1	
Agriculture, Forestry & Fishing	Not enough people looking for work					1
Agriculture, Forestry & Fishing	Pay, timing					1
Agriculture, Forestry & Fishing	Personal circumstances of employee	1				
Retail Trade	Previous employee left	1				
Retail Trade	Shortage of skilled labour (mechanics)		1			
Manufacturing	Shortage of tradesmen		1			
Retail Trade	Skilled employees leaving for the mines		1			
Accommodation and food services	Time of year					1
Total		4	7	2	2	3

Source: JSA 2007

9.3. Future Intentions

Businesses were asked about their plans for the future and whether they intended to grow their businesses in the next 5 years. 68% of respondents stated they intended to grow, 11% planned to retire and 17% planned to stay the same. The main reasons provided for those who intended to retire included age, uncertainty about whether they would achieve this aim, and that they have 'had enough too much government interference'. Some of the main reasons provided from those who intended to stay the same were satisfaction with where they are, family, lack of decent staff to employ, uncertainty about the future, and the ability to grow is not there at the moment.



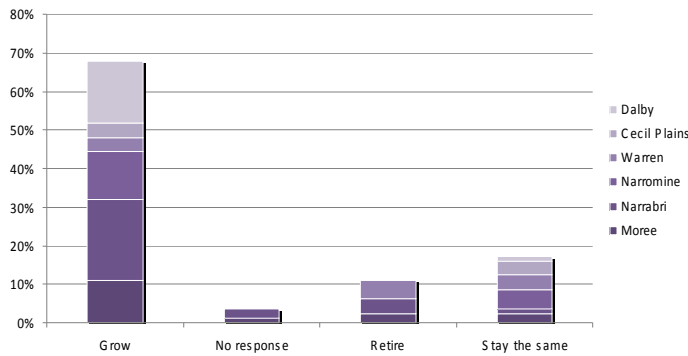


Figure 9.12: Business intentions by town
Source: JSA 2007

9.4. Industry Competition

Jobs in the mining sector appear to be the primary source of competition for businesses related to agriculture, forestry and fishing. This appears to be especially the case in Moree and Warren based on the responses received. Manufacturing jobs also appear to be a leading competitor of agriculture, forestry and fishing jobs in Moree. With regards to retail jobs, the primary competition is with other retailing businesses.

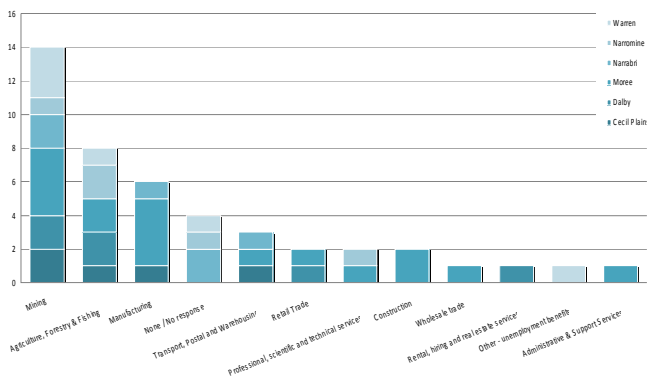


Figure 9.13: Industries competing with Agriculture, Forestry & Fishing
Source: JSA 2007

9.5. Issues Affecting Business

Respondents were asked to select from a list the three issues that are most affecting their business. By far the standout issue affecting the respondents was Drought with 88%. Market outlook and uncertainty (40%), Petrol Prices (35%) and Interest Rates (32%) were also reported as significant issues. Other issues mentioned included the availability of raw materials, biotechnology, cost of living and the loss of seasonal workers, off-peak electricity rates for irrigation, the flow on effects of high unemployment and a general reduction in spending across the community.

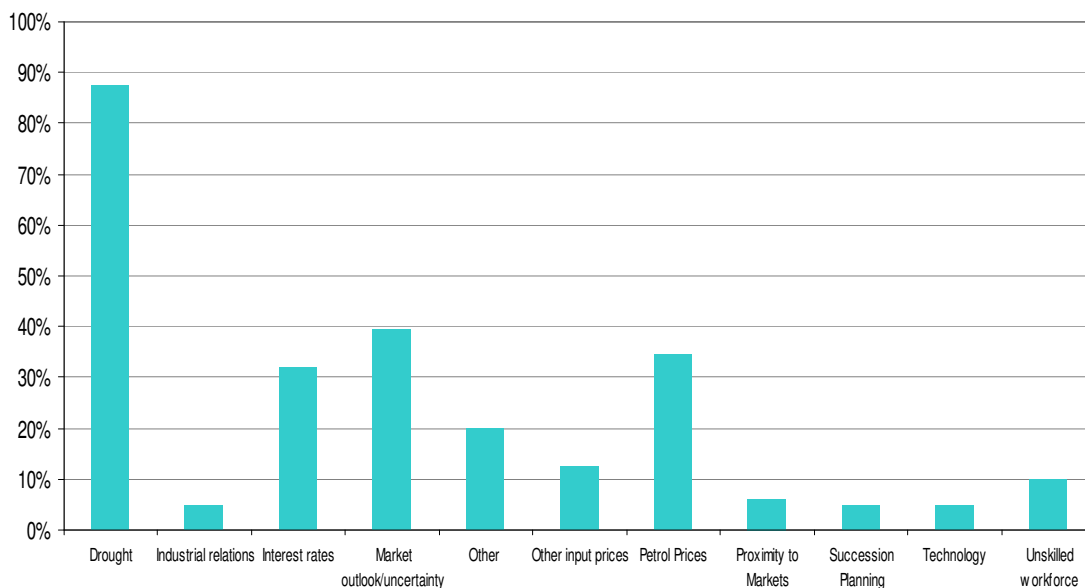


Figure 9.14: Issues directly affecting businesses
Source: JSA 2007

9.6. What else do we need to know about Local Business Vitality?

Businesses were encouraged to respond freely to the question of, “Is there anything else you think we should know about local business vitality in your community?” The table below provides a comprehensive summary of the responses received.

Table 9.2: Summary of Responses by Town – What else do we need to know about local business vitality?

Location	Industry	Response
Cecil Plains	Agriculture, Forestry & Fishing	The increase of power stations and coal miners plus hopefully the end of drought may spur on an economic boom in the review
Dalby	Manufacturing	Rural communities provide far more financially to the overall community compared to money returned for infrastructure
Dalby	Financial and Insurance services	Shortsighted vision related to change & new ideas (growth). Town has difficulty I believe to accepting change and new community members
Moree	Professional, scientific and technical services	Business is good, just work out how to grow Moree! Rural clients are reducing in number but increasing in scale. Rural workforce is reducing.
Moree	Agriculture, Forestry & Fishing	Effect of decreased irrigation water on whole community if continues
Moree	Agriculture, Forestry & Fishing	Government & environmentalists constantly taking greater share of available water resource without any accountability. Government employees with no or limited experience in local issues, history, practices.
Moree	Agriculture, Forestry &	Information and mobility is hurting retailers as customers can source products





Location	Industry	Response
	Fishing	from capital city's themselves
Moree	Retail Trade	Lack of motivated and forward thinking leaders of the community
Narrabri	Retail Trade	Cut back, cut costs
Narrabri	Retail Trade	No drought assistance
Narrabri	Other - Automotive Sales, Service & Spares	Our community is big in agriculture, grains, cotton, beef, sheep, pork. Now also mining, natural gas.
Narrabri	Agriculture, Forestry & Fishing	Poor return on advertising - paper and radio
Narrabri	Agriculture, Forestry & Fishing	Stable
Narrabri	Agriculture, Forestry & Fishing	Stable community, young people going to university
Narrabri	Agriculture, Forestry & Fishing	Top 5% of farmers not struggling, next 15% comfortable, 80% historical reasons, low debt, technology adaptation, efficiency, proximity to rainfall xxx (east of Narrabri)
Narromine	Accommodation and food services	At the moment I would not go into business in the country. I am going broke.
Narromine	Retail Trade	Drought is by far the biggest problem. We need lots more water to get everything going again.
Narromine	Agriculture, Forestry & Fishing	Irrigation industry important - future govt policies on water allocations
Narromine	Accommodation and food services	Seriously affected by drought
Warren	Agriculture, Forestry & Fishing	Agriculture is in a lot of trouble: cost price squeeze, global warming and government policies and OHS
Warren	Agriculture, Forestry & Fishing	Dubbo is too close for retail sales
Warren	Other - Automotive Sales, Service & Spares	Main income from large agricultural farms employees
Warren	Retail Trade	There are many closed shops. Lack of confidence to open and maintain a new business. People are not spending on unnecessary items during drought.

Source: JSA 2008



10. Relationship between Cotton and Community Wellbeing

To begin to understand the relationship of the cotton industry on the wellbeing of the cotton communities, we selected two communities that have no association with cotton to compare against a sub-set of the indicators. The first part of this section looks at the basic results from this exercise. The second part of this section looks in depth at how the sub-set of indicators correlates with median household income and how residents feel about living in their community currently.

Selection of Non-Cotton Communities

Two NSW communities were selected at random as proxy non-cotton communities for comparison with the cotton communities for a selection of indicators. The process of selecting these towns involved some basic criteria for short-listing the LGAs in NSW, followed by random selection from the short-list. The NSW LGAs were short-listed by applying the basic criteria that the area must be:

- Non-coastal
- Non-regional centres with population less than 16,000
- Relatively remote from a major regional centre

Next, random numbers were generated using Microsoft Excel. These numbers were used to select two LGAs from the shortened list. Junee and Oberon were selected through this process.

Sub-set of Indicators

A sub-set of the indicators was selected to investigate the relationship between cotton and community wellbeing. These indicators were chosen as they provide information on some of the key themes of wellbeing including employment, population change, disadvantage, health, housing and community engagement. These indicators include: median household income, % population change between 2001 to 2006, % 2006 population that is Indigenous, median age, SEIFA index of disadvantage, % of the population 15 years and over that has trade or better qualifications, labour force participation 15 years and over, labour force participation 65 years and over, youth unemployment, premature mortality rate, chronic disease index, rate of theft from dwelling, rate of total personal crime and rate of volunteering for an organisation. The following table provides detailed results for these indicators for the cotton and non-cotton communities.





Figure 10.1: Results for Sub-set of Indicators including Non-Cotton Communities

	Moree Plains	Narrabri	Narromine	Warren	Dalby	Millmerran	Junee	Oberon
Median Household Income (\$/week)	946	792	725	696	940	795	761	904
% Population Change (2001 – 2006)	-9.9	-5.5	-3.2	-15.2	1.3	-21.8	3.2	-1.1
% Population - Indigenous 2006	19.4	9.2	15.8	12.1	6.1	2.7	5.4	2.1
Median Age	34	37	38	40	34	39	36	38
SEIFA Disadvantage	928.88	966.82	948.24	959.53	989.52	976.17	959.5	978.4
Skills Base - % of pop 15+ w/ trade or better qualifications	28.9	29.1	29.6	27.9	28.9	25.1	26.8	32.2
Labour Force Participation (15+)	61.8	61.3	59.8	64.1	62	62.3	47.6	61.4
Labour Force Participation (65+)	20.4	14.9	17.6	26.6	10.0	18.6	10.9	20.8
Youth (15-24) Unemployment Rate	13.2	13.9	15.3	13.8	9.3	7.3	11.8	9.3
Premature Mortality Rate	3.28	4.88	3.94	4.64	DNA	DNA	2.39	2.32
Chronic Disease Index	922.5	950.7	958.7	DNA	996.1	940.4	945.2	900.6
Crime Rate (Steal from Dwelling)	571.0	592.7	440.8	672.2	DNA	DNA	253.3	422.3
Crime Rate (Total personal crime)	3325.9	1961.6	1905.3	2658.2	DNA	DNA	1199.0	881.3
Voluntary work for an organisation	22	25.8	26.3	29.1	22.1	28.5	21	22

Source: ABS (2006) Population and Housing Census, PHIDU (2005), BOCSAR (2007)

10.1. % Population Change (2001 – 2006)

Junee experienced an increase in population of 3.2% between 2001 and 2006. The increase experienced in Junee is higher than the only increase by a cotton community, however its growth rate is well below the Balance NSW average and national average – though on par with the state average. Oberon, similar to the other cotton towns lost population, though at a reduced rate of -1.1%.

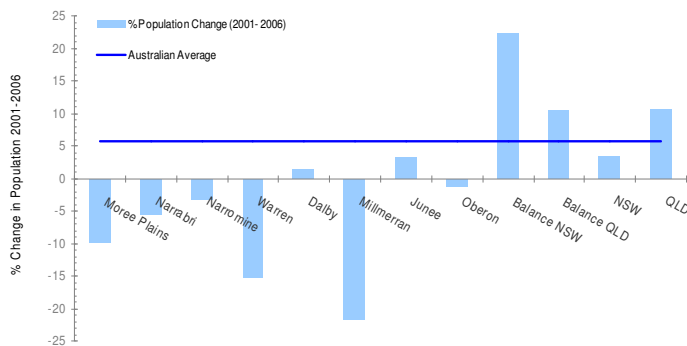


Figure 10.2: % Population Change 2001 – 2006, Non-Cotton Comparison
Source: ABS (2006)

10.2. % Population 2006 – Indigenous

When compared to the NSW cotton communities, Junee and Oberon have relatively low proportion of the population that is Indigenous – though the rates are quite similar to the Queensland cotton towns. Junee has a higher proportion at 5.4%, while Oberon just matches the NSW average at 2.1%.

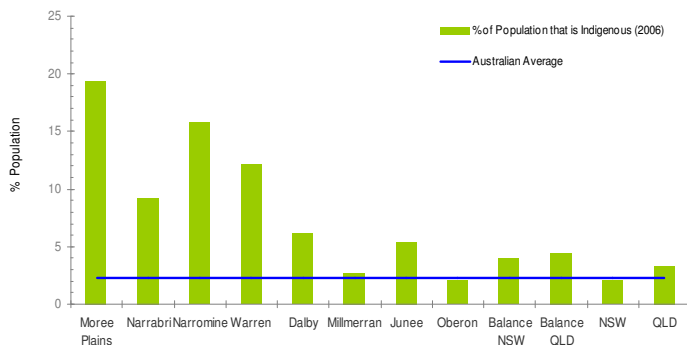


Figure 10.3: % of Population that is Indigenous, Non-Cotton Comparison
Source: ABS (2006)

10.3. Median Age

Junee and Oberon have relatively similar median ages of 36 and 38 respectively, when compared to the cotton communities.

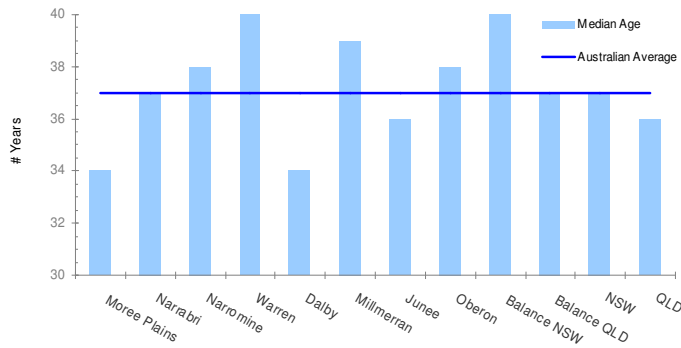


Figure 10.4: Median Age, Non-Cotton Comparison
Source: ABS (2006)

10.4. SEIFA Index: Disadvantage

Junee appears to have a quite similar rate of disadvantage compared to the other NSW cotton communities, with Moree Plains still the most disadvantaged. Oberon has a lower rate of disadvantage than the NSW cotton communities, and more on par with the Queensland cotton communities with a SEIFA value of 978.4. While both towns remain below the national average for this SEIFA index, they are not too far off the Balance values for both NSW and QLD suggesting that they are typical of rural and regional areas in these states.

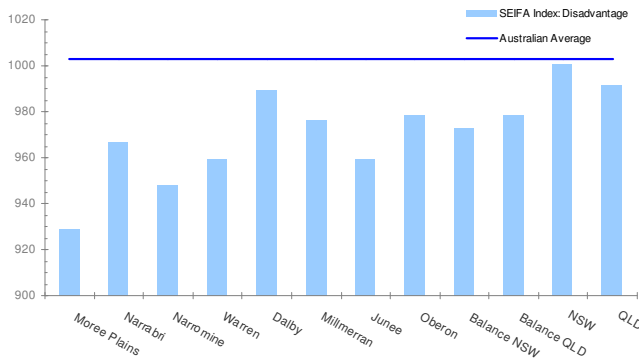


Figure 10.5: SEIFA Index of Disadvantage, Non-Cotton Comparison
Source: ABS (2004) SEIFA

10.5. Skills Base - % of the population 15+ with trade or better qualifications

Junee has a slightly lower proportion of the population 15 and over with trade or better qualifications at 26.8% compared with the NSW cotton communities. Oberon has a larger proportion of the population with trade or better qualifications at 32.2%, compared to the highest scoring cotton community of Narromine at 29.6%.

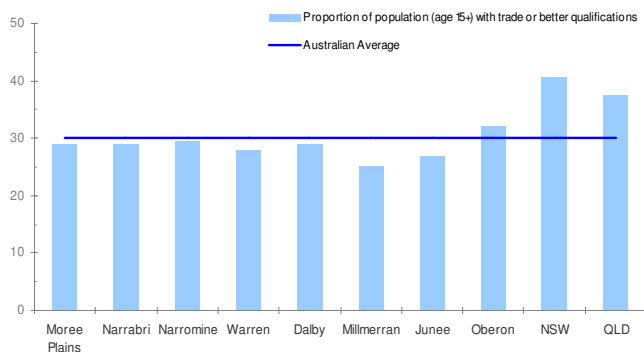


Figure 10.6: % of Population 15+ with Trade or Better Qualifications, Non-Cotton Comparison
Source: ABS (2006) Census of Population and Housing

10.6. Labour Force Participation General (15+)

Oberon has a general labour force participation rate similar to that of the cotton communities at 61.4%. On the other hand, Junee has a much lower labour force participation rate compared to the other towns, the state and national benchmarks at 47.6%. This is most likely to be the result of the location of a privately run prison (capacity 750) in Junee, which would account for a section of the population excluded from the labour force thus bringing down the labour force participation rate.

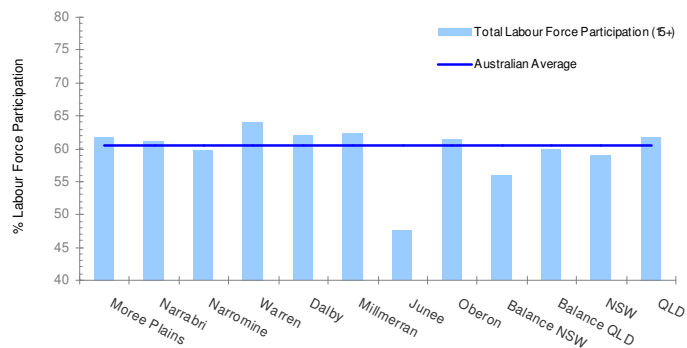


Figure 10.7: Labour Force Participation 15+, Non-Cotton Comparison
Source: ABS (2006) Census of Population and Housing

10.7. Labour Force Participation (65+)

Junee has a relatively low labour force participation rate for those 65 years at 10.9% when compared with the cotton communities. It most closely matches the rate reported by Dalby of 10.0%. Oberon has a much higher rate of 20.8%, which is consistent with the other cotton communities, yet does not reach the high point sent by Warren at 26.6%.



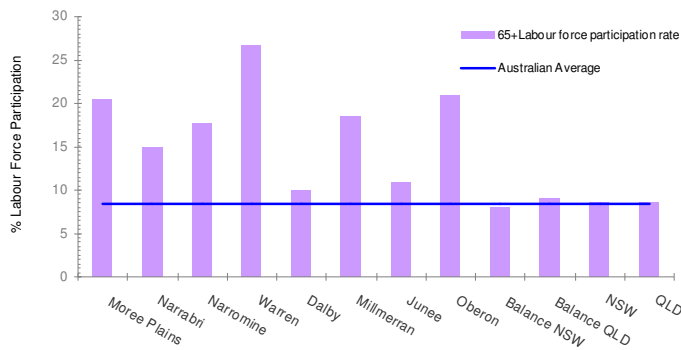


Figure 10.8: Labour Force Participation 65+, Non-Cotton Comparison
Source: ABS (2006) Census of Population and Housing

10.8. Youth Unemployment

Junee and Oberon report lower levels of youth unemployment than the other NSW cotton communities, though not quite as low as the values reported by the Queensland cotton communities.

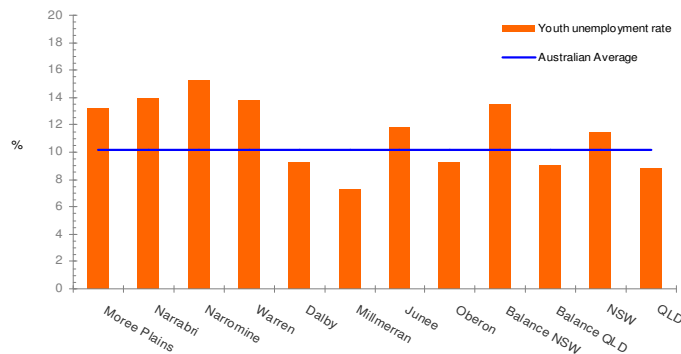


Figure 10.9: Youth Unemployment (15-24), Non-Cotton Comparison
Source: ABS (2006) Census of Population and Housing

10.9. Total Premature Mortality

The ABS recently released the NSW regional statistics in December 2007. This information included total premature mortality rates for NSW LGAs, thus data is not available at this time for Queensland. This figure shows an interesting difference between the cotton and non-cotton communities, such that the cotton communities all have relatively high total premature mortality rates compared to the NSW average, while Junee and Oberon both have rates lower than the state average and rates very similar to each other at 2.39 and 2.32 respectively.

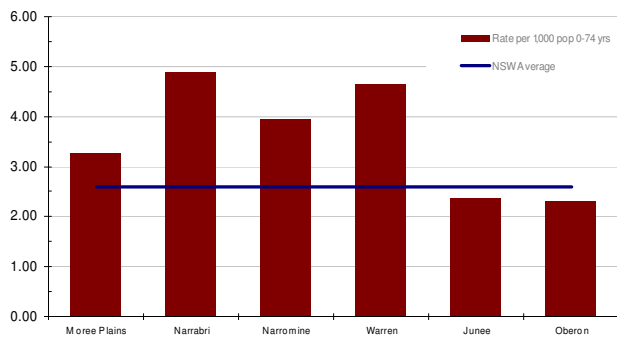


Figure 10.10: Total Premature Mortality NSW, Non-Cotton Comparison
Source: ABS (2007) NSW Regional Statistics

10.10. Chronic Disease Index

To devise an index of chronic diseases, we calculated a sum of the rate per 1,000 population for five conditions including respiratory system diseases, circulatory system diseases, type 2 diabetes, mental and behavioural disorders, and musculoskeletal diseases. Junee had a similar value compared with the cotton communities and higher than the Australian average, while Oberon reported a lower value compared to the cotton communities. Note that data was unavailable for Warren.

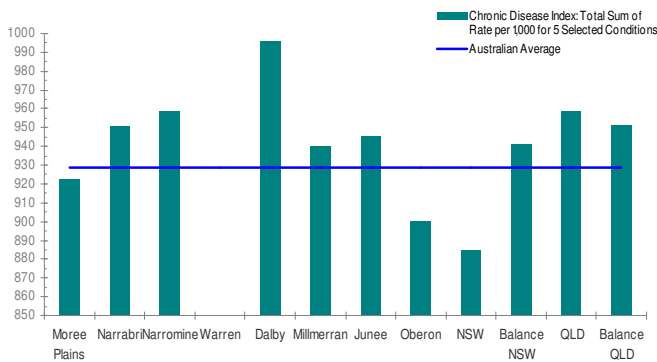


Figure 10.11: Chronic Disease Index, Non-Cotton Comparison
Source: PHIDU (2005)

10.11. Crime Rate: Steal from Dwelling

Junee has a lower rate of reported incidence of steal from dwelling compared to the NSW cotton communities. Oberon has a similar rate to Narromine and is also above the NSW average. Though it is obvious that the NSW cotton communities have an overall higher rate of steal from dwelling than the non-cotton communities.

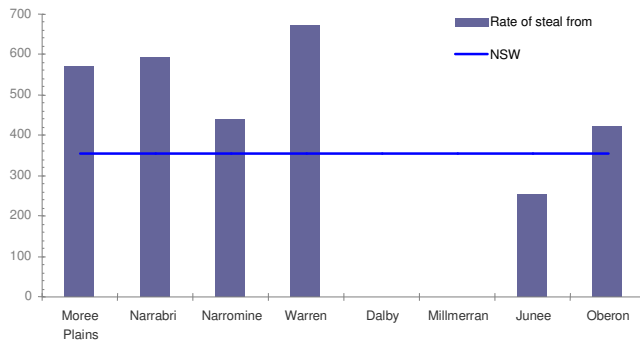


Figure 10.12: Rate of Steal from Dwelling NSW, Non-Cotton Comparison
Source: BOCSAR (2007)

10.12. Crime Rate: Total Personal Crime

Total personal crime rate is calculated as a sum of the rates per 100,000 population of domestic assault, non-domestic assault, and sexual assault. Again, the crime rates in Junee and Oberon are much lower than the NSW cotton communities. The non-cotton communities also both fall below the state average rate. Oberon reports the lowest rate of total personal crime at 881.3, which is over four times lower than the Moree Plains at 3325.9. Note that comparable data is not available for the Queensland communities.

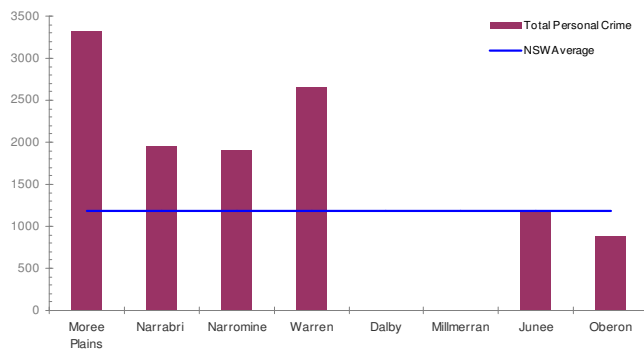


Figure 10.13: Total Personal Crime Rate, Non-Cotton Comparison
Source: BOCSAR (2007)

10.13. Voluntary work for an organisation or group

Voluntary work for an organisation or group includes help willingly given in the form of time, service or skills, to a club, organisation or association and may include assisting at organised events and with sports organisations, helping with organised school events and activities, assisting in churches, hospitals, nursing homes and charities, or other kinds of volunteer work such as emergency services, etc. Voluntary work excludes unpaid work done through a club, organisation or association mainly in order to qualify for



government benefits such as Newstart Allowance. It also excludes any activity that is part of a person's paid employment or family business.⁷³

The cotton communities all have a higher rate of volunteering for an organisation or group compared to the state and national averages. Millmerran and Warren have especially high rates. Likewise, Junee and Oberon have higher rates of volunteerism compared with the state and national benchmarks, and similar rates to some of the cotton communities.

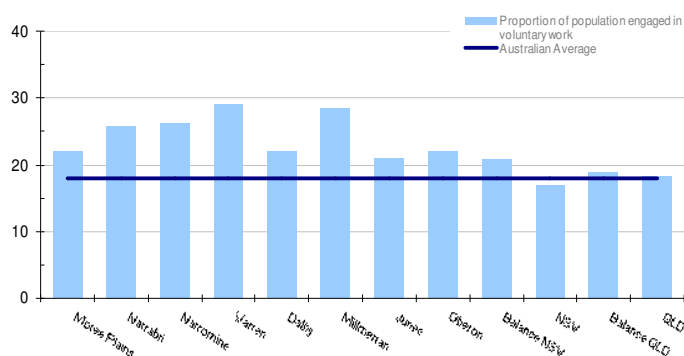


Figure 10.14: % of Population Engaged in Voluntary Work
Source: ABS (2006) Census of Population and Housing

⁷³ ABS (2006) Census Dictionary, cat no. 2901.0, Reissue





11. Relationship Between Indicators

We are interested in investigating how the results from the sub-set of indicators for the cotton communities and the non-cotton communities related to other key indicators including median household income and results from the community survey about how positive people are about living in the cotton communities.

The first indicator we chose to look at is median household income as we are interested in the relationship between income and the themes of employment, population change, disadvantage, health, housing and community engagement. Is there any correlation between household income levels and the results for these indicators? Do towns with higher income levels experience any marked improvement in wellbeing or quality of life than other communities?

The second and third indicators we looked at were the results from the community survey question that asked interviewees,

“Overall, do you feel more positive (happy) or negative (unhappy) about living in [LGA] at the moment?”

Interviewees were directed to respond to this question along a five-point scale ranging from very positive to very negative. For the purposes of this relationship exercise, we chose to look at results for ‘very positive’ feelings about living in the community at the moment, and the overall positive results by adding ‘very positive’ and ‘positive’ responses together. Table 11.1 below provides the results obtained for median household income, ‘very positive’ feelings, and ‘very positive’ plus ‘positive’ feelings about living in the community currently. Note that data for the community survey is not available for Junee and Oberon as the survey was solely conducted in the selected cotton communities.

Table 11.1: Indicators to Investigate Correlations

	Moree Plains	Narrabri	Narromine	Warren	Dalby	Millmerran	Junee	Oberon
Median Household Income (\$/week)	946	792	725	696	940	795	761	904
Very Positive	27%	47%	27%	23%	27%	47%	DNA	DNA
Very Positive + Positive	73%	93%	87%	90%	80%	93%	DNA	DNA

Source: ABS (2006) and JSA (2007)

The table below shows the results of the correlation analysis of the sub-set indicators against medium household income, ‘very positive’ feelings, and ‘very positive + positive’ feelings towards living the community. Those portions of the table that are shaded yellow are those findings that appear to be significant or are of particular mention and are discussed in further detail in this section.

Table 11.2: Summary of Relationships Between Indicators



	Median Household Income	Very Positive	Very Positive + Positive
Median Household Income	N/A		Higher level of happiness at lower income levels – money does not equal happiness (R ² =0.593) note high value, likely significant
% Population Change (2001 – 2006)	No evidence to suggest that economy is a good indicator for rural decay (R ² =0.067)	Happiness increases as population change decreases – perhaps happier people don't leave? (R ² =0.13)	Happiness increases as population change decreases – perhaps happier people don't leave? (R ² =0.173)
% Population Indigenous 2006	No discernable relationship (R ² =0.005)	As Indigenous pop increases level of very positive decreases – cultural differences? Residential prejudice? (R ² =0.362) note reasonably significant	As Indigenous pop increases level of very positive + positive decreases – cultural differences? Residential prejudice? (R ² =0.336) note reasonably significant
Median Age	As median age decreases, income increases – perhaps young people go where the money is. Not likely to be an effect of indigenous pop & young indigenous pop as indigenous pop does not correlate with income (R ² =0.546)	No discernable relationship, not significant (R ² =0.048)	As median age increases, level of positive + very positive increases – either older people are more satisfied or the longer you live somewhere the more you like it? (R ² =0.677)
SEIFA Disadvantage	No significant correlation – clearly disadvantage comes from other factors (R ² =0.019)	As disadvantage decreases (more advantaged) level of very positive increases – more advantaged tend to be happier (R ² =0.123)	As disadvantage decreases (more advantaged) level of very positive + positive increases – more advantaged tend to be happier (R ² =0.193)
Skills Base - % of pop 15+ w/ trade or better qualifications	No discernable relationship, not significant (R ² =0.151) – slope shows skills level increases slightly as income increases	Less skilled communities appear to be slightly more positive about life in their area (R ² =0.2511)	Less skilled communities appear to be slightly more positive about life in their area (R ² =0.2063)
Labour Force Participation (15+)	No discernable relationship, not significant (R ² =0.043)	No discernable relationship, not significant (R ² =0.02)	No discernable relationship, not significant (R ² =0.014)
Labour Force Participation (65+)	No discernable relationship, not significant (R ² =0.067)	No discernable relationship, not significant (R ² =0.07)	No discernable relationship, not significant (R ² =0.023)
Youth Unemployment	Youth employment decreases as income increases, unlikely to be an artefact of indigenous pop as dismissed previously (R ² =0.20) – relatively weak correlation	Level of very positive increases as youth unemployment decreases – more positive when children are getting jobs? (R ² =0.157)	No discernable relationship, not significant (R ² =0.007)
Premature Mortality Total	Premature mortality rate decreases as income increases – perhaps wealthier people	Premature mortality rate slightly increases as level of very positive increases – no	Premature mortality rate increases as level of very positive + positive increases





	Median Household Income	Very Positive	Very Positive + Positive
	can afford better health care? (R ² =0.252)	idea? (R ² =0.286) note only 4 points	– no idea? (R ² =0.917) note only 4 points
Chronic Disease Index	No discernable relationship, not significant (R ² =0.012)	No discernable relationship, not significant (R ² =0.074)	No discernable relationship, not significant (R ² =0.0007)
Crime (Theft from Dwelling)	No discernable relationship, not significant – theft not about poor people (R ² =0.0008)	No discernable relationship, not significant (R ² =0.0017)	No discernable relationship, not significant (R ² =0.036)
Crime (Total personal crime)	No discernable relationship, not significant – personal crime not about poor people (R ² =0.011)	As personal crime rate decreases level of very positive increases (R ² =0.248) – note only 4 data points	As personal crime rate decreases level of very positive + positive increases (R ² =0.65) – note only 4 data points
Voluntary work for an organisation	As household income increases level of volunteering decreases – perhaps wealthier people are worker more or have less time to volunteer? (R ² =0.456)	No discernable relationship, not significant (R ² =0.089)	As volunteering increases, level of very positive + positive increases – perhaps people are more positive when engaged with community? (R ² =0.725)

Source: JSA 2007

11.1. Median Household Income by Very Positive + Positive

We chose to look at the correlation between median household income and the level of positive feelings about living in the areas. It is important to mention that respondents were overwhelmingly positive about living in their communities at the moment. We were interested in testing the idea that areas with higher income levels would be generally ‘happier’ or more positive about life in their community. To the contrary, the results suggest that higher levels of satisfaction or more positive feelings about life in the area can be found in the areas with lower income levels. While we acknowledge the limitations of the small sample size, results point to a likely significant correlation (R²=0.593).

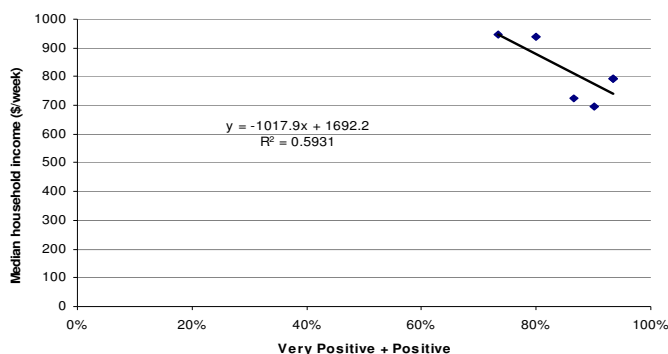


Figure 11.1: Median Household Income by Very Positive + Positive
Source: JSA (2007)



11.2. Median Household Income by % Population Change 2001-2006

When median household income is correlated with % population change from 2001 to 2006, we see that income appears to have little to do with whether an area gained or lost population. While the general trend appears to be that those areas with higher incomes lost slightly less population, the scattering of the points away from the trend line indicates that there is little to no evidence to suggest that economy is a good indicator for population loss or rural decay ($R^2=0.067$).

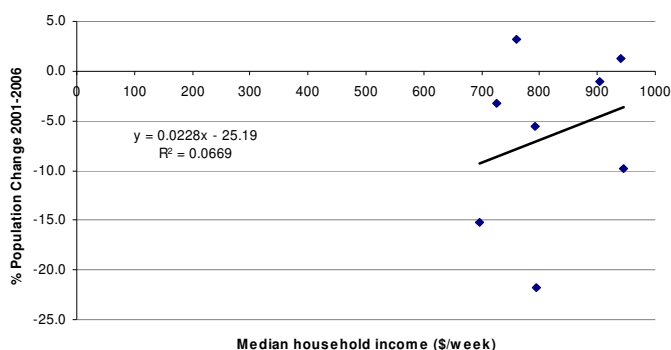


Figure 11.2: % Population Change By Median Household Income
Source: JSA (2007)

11.3. Median Household Income by % Indigenous Population

This graph looks at the relationship between the median household income and the proportion of the population that is Indigenous. These results suggest that there is no discernable relationship between the two. Whilst the line does show a very slight increase in median household income where there is a lower proportion of the population that is Indigenous, it is very low level of significance ($R^2=0.0045$).

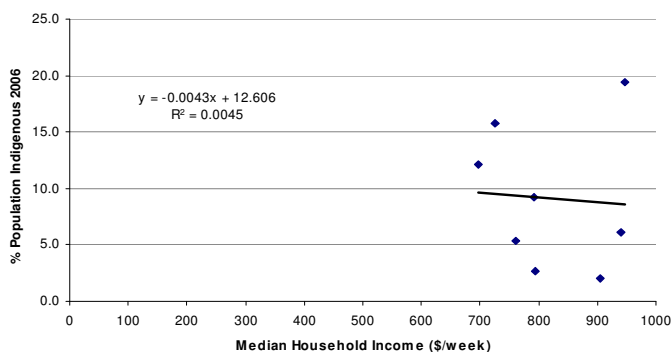


Figure 11.3: % Indigenous Population by Median Household Income
Source: JSA (2007)





11.4. Median Household Income by Median Age

Do areas with older or younger populations earn more? Our findings suggest that as median age decreases household income levels increase. Perhaps young people seek out a place to live based on well-paid employment? Or perhaps communities with more of an aged population, who may rely on pensions etc, may contribute to lower household income levels for the area? This trend is unlikely to be an effect of the level of Indigenous and young Indigenous populations as the level of Indigenous population does not correlate with household income as discussed above (See Figure 11.3).

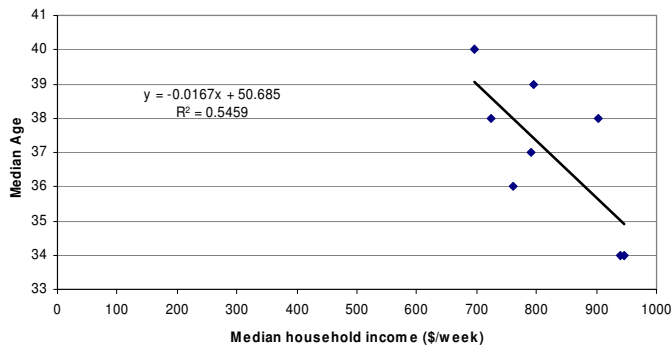


Figure 11.4: Median Household Income By Median Age
Source: JSA (2007)

11.5. Median Household Income by Skills Base

Do areas with a higher proportion of skilled adults in the population result in higher household income levels? While this data does not reveal a very strong relationship between the two indicators, as median household incomes increase we do see an increase in the proportion of the population with trade or better qualifications.

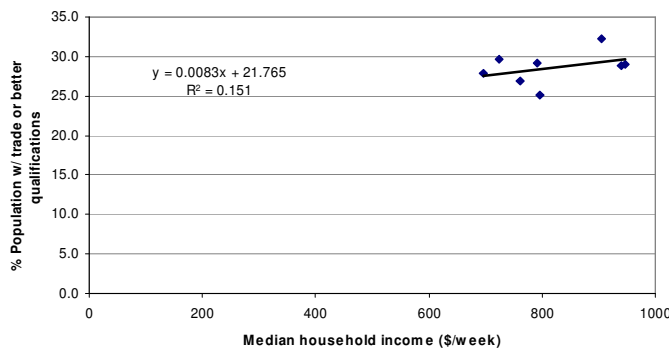


Figure 11.5: Median Household Income by Skills Base
Source: JSA (2007)



11.6. Median Household Income by Youth Unemployment

Employment opportunities for young people that encourage them to stay or return to an area are often a goal for rural communities. Youth unemployment rate is an indication of the opportunities available for young people in the labour force, and their uptake of those opportunities. When we correlate youth unemployment with median household income, we see that the youth unemployment rate decreases as household income levels increase.

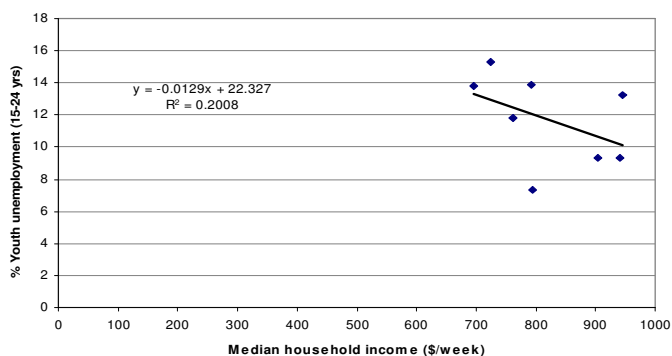


Figure 11.6: Median Household Income by Youth Unemployment
Source: JSA (2007)

11.7. Median Household Income by Steal from Dwelling

Crime rates, especially those related to theft, are often perceived to correlate with poorer areas. When we correlate rate of steal from dwellings with median household incomes for the NSW communities results show that there is no discernable relationship between the two indicators. Thus, we could infer that theft from dwellings is likely to be related to factors beyond income level.

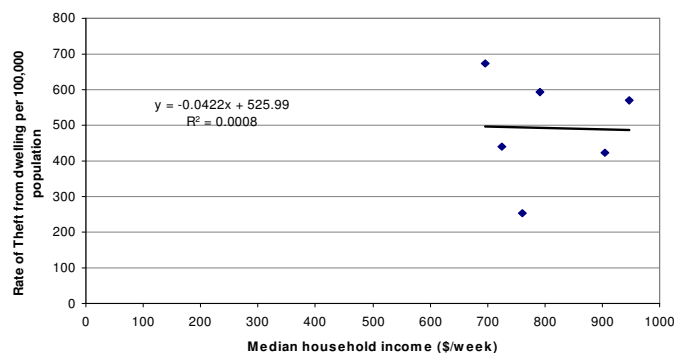


Figure 11.7: Median Household Income by Steal from Dwelling
Source: JSA (2007)



11.8. Median Household Income by Voluntary Work for an Organisation or Group

Do those with higher income levels spend more or less time volunteering for organisations and groups? These results show that as median household income level increases, the level of volunteering decreases. Perhaps wealthier people are spending their time working more and have less time to volunteer? This also supports the idea that community involvement has little to do with how much money people have, and more to do with other community and social factors.

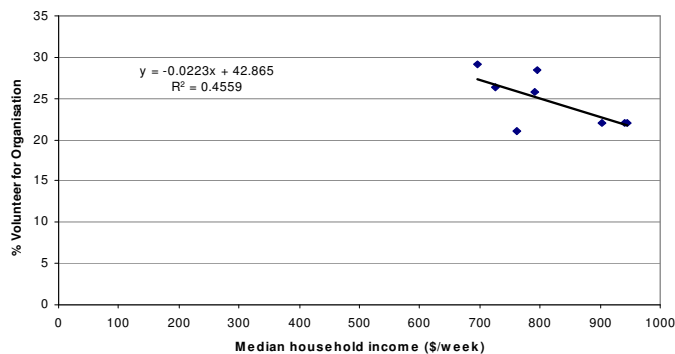


Figure 11.8: Median Household Income by Voluntary Work for an Organisation or Group
Source: JSA (2007)

11.9. Very Positive + Positive by % Population Indigenous 2006

As the proportion of the population that is Indigenous increases, residents are less likely to report that they are very positive and/or positive about living in their community currently. Note that the majority of respondents were generally positive about life in their communities and that this finding is only reasonably significant ($R^2=0.2929$).

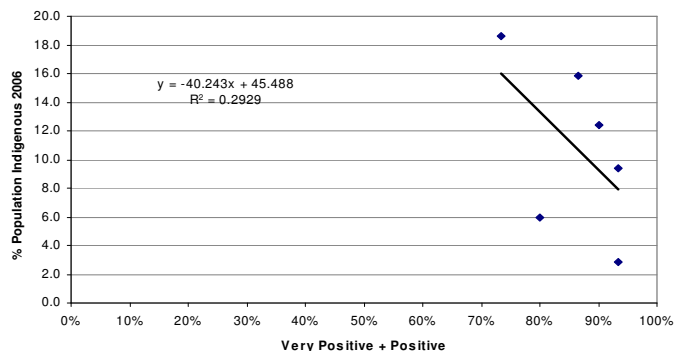


Figure 11.9: Very Positive + Positive By Indigenous Population
Source: JSA (2007)



11.10. Very Positive + Positive by SEIFA Index: Disadvantage

This graph looks at the relationship between disadvantage and how positive people are about life in their communities. Results show that as disadvantage decreases and people become more advantaged, the level of very positive + positive feelings about life increases. Thus, supporting the idea that more advantaged communities tend to be happier about living in their communities ($R^2=0.193$).

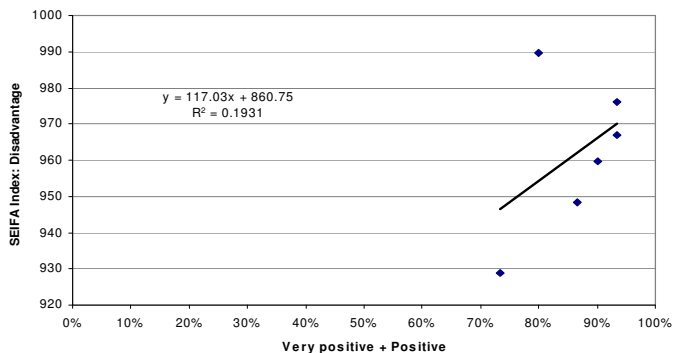


Figure 11.10: Very Positive + Positive By SEIFA Index of Disadvantage
Source: JSA (2007)

11.11. Very Positive + Positive by Total Personal Crime

Recall that total personal crime is the sum of non-domestic assault, domestic assault and sexual assault for the NSW communities. This graph looks at the relationship between total personal crime and how positive respondents are about life in their communities. Results show that as total personal crime rate decreases, the level of very positive + positive feeling about life in one's community increases ($R^2=0.65$) – note only 4 data points due to limitations of the community survey.

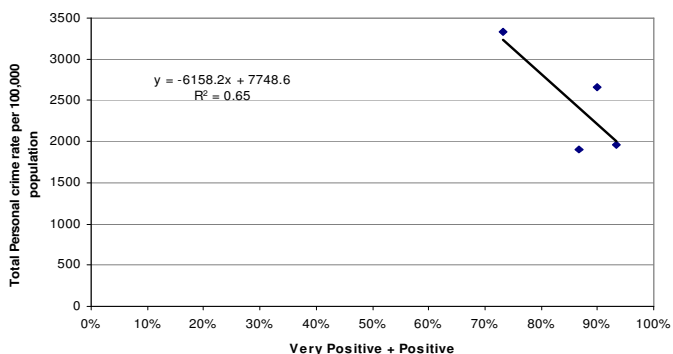


Figure 11.11: Very Positive + Positive By Total Personal Crime
Source: JSA (2007)





11.12. Very Positive + Positive by Voluntary Work for an Organisation or Group

As the level of volunteering for an organisation or group increases, the level of very positive + positive feeling about life in one's community also increases. Perhaps people are more positive about their community when they are actively engaged with community? Note that this finding is relatively significant ($R^2=0.725$).

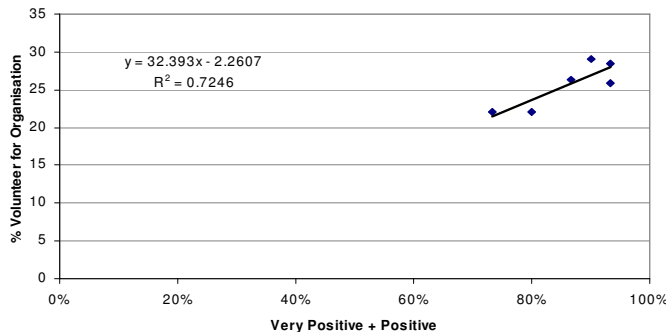


Figure 11.12: Very Positive + Positive Voluntary Work for an Organisation or Group
Source: JSA (2007)

This table provides a summary of our investigation into the relationship between the proportion of Indigenous population and a selection of the indicators.

Table 11.3: Summary of Relationship between % of Indigenous Population and Indicators

% of Population that is Indigenous 2006	
Median Age	Very slight decrease in median age as proportion of Indigenous population increases, would have expected a more significant correlation ($R^2=0.054$)
SEIFA Disadvantage	Highly correlated and significant, level of disadvantage greater in areas with higher prop of indigenous population ($R^2=0.749$)
Skills Base - % of pop 15+ w/ trade or better qualifications	No discernable relationship ($R^2=0.013$)
Labour Force Participation (15+)	No discernable relationship – very flat slope w/ slight increase, would have expected LFP to decrease as Indigenous population increased ($R^2=0.04$)
Youth Unemployment	Youth unemployment increases as Indigenous population increases – perhaps most youth unemployment is Indigenous, or Indigenous young people stay in town in the absence of work ($R^2=0.635$)
Premature Mortality Total	Premature mortality rate increases as Indigenous population increases – however, there is a distinct difference between the 4 cotton towns and the 2 non-cotton towns. While the cotton towns all have much higher rate of premature deaths and higher proportion of indigenous population – those towns with the highest indigenous populations have the lowest rates of the cotton towns. Thus, the high rates may be more associated with the non-Indigenous population, which is contrary to what we'd expect. ($R^2=0.178$)



% of Population that is Indigenous 2006	
Chronic Disease Index	No discernable relationship ($R^2=0.0834$)
Crime (Theft from Dwelling)	Theft from dwelling rate increases as proportion of population that is Indigenous increases – crime more likely to be associated with Indigenous population but not to the same degree as personal violence ($R^2=0.22$)
Crime (Total personal crime)	Personal crime rate increases as proportion of population that is Indigenous increases – highly significant and troubling, violence appears closely associated with Indigenous population ($R^2=0.779$)
Voluntary work for an organisation	No discernable relationship ($R^2=0.008$).

Source: JSA (2007)

11.13. % Population Indigenous 2006 by SEIFA Index: Disadvantage

The relationship between the proportion of Indigenous population and disadvantage appears to be highly correlated and significant. The level of disadvantage is greater in communities with higher proportions of Indigenous population ($R^2=0.749$).

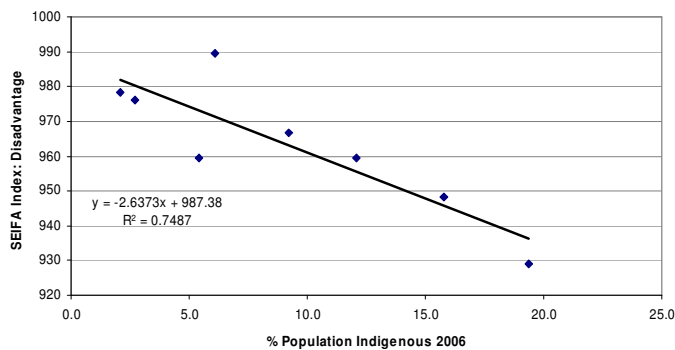


Figure 11.13: % Indigenous Population By SEIFA Index of Disadvantage
Source: JSA (2007)

11.14. % Population Indigenous 2006 by Youth Unemployment

This graph looks at the relationship between youth unemployment and Indigenous population. In communities with higher proportions of Indigenous population the level of youth unemployment is higher ($R^2=0.635$). Perhaps most youth unemployment in the communities is related to the Indigenous population? Or perhaps young Indigenous people remain in towns in the absence of work? It would be interesting to investigate this relationship further.



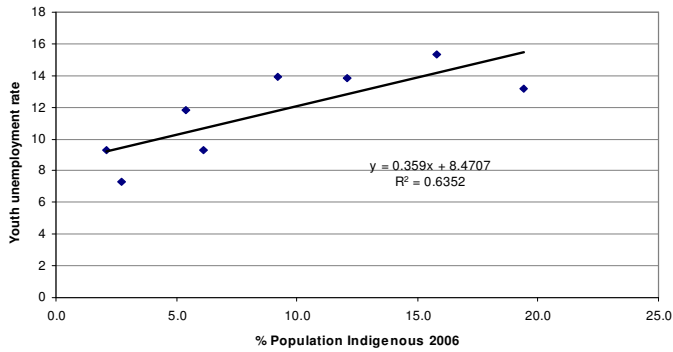


Figure 11.14: % Indigenous Population By Youth Unemployment
Source: JSA (2007)

11.15. % Population Indigenous 2006 by Premature Mortality Total Rate 2007

Premature mortality rate increases as Indigenous population increases – however, there is a distinct difference between the 4 cotton towns and the 2 non-cotton towns. While the cotton towns all have much higher rate of premature deaths and higher proportions of Indigenous population – those towns with the highest Indigenous populations have the lowest rates of premature death of the cotton towns. Thus, the high rates may be more associated with the non-Indigenous population, which is contrary to what we might expect ($R^2=0.178$). Again, this would be an interesting aspect to further research.

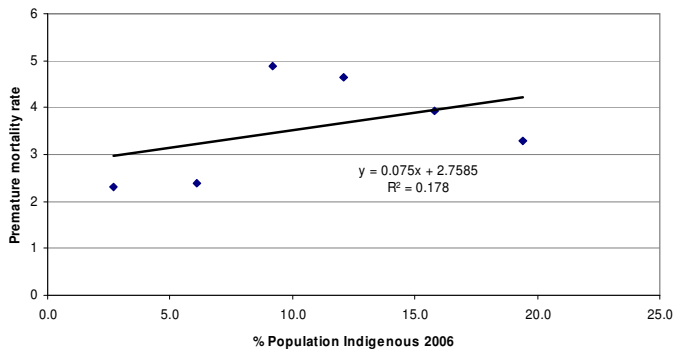


Figure 11.15: % of Indigenous Population By Premature Mortality Total Rate 2007
Source: JSA (2007)

11.16. % Population Indigenous 2006 by Steal from Dwelling

There does appear to be some link between the proportion of the population that is Indigenous and the rate of steal from dwelling. While a trend does appear here, it must be noted that those towns with the



highest proportion of Indigenous population were not the areas with the highest rates of steal from dwelling ($R^2=0.2203$).

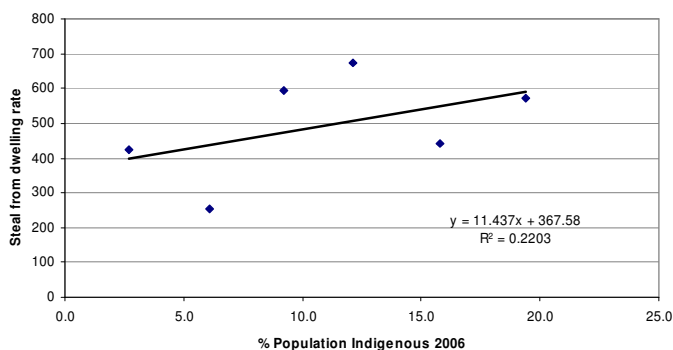


Figure 11.16: % of Indigenous Population By Steal from Dwelling
Source: JSA (2007)

11.17. % Population Indigenous 2006 by Total Personal Crime

There appears to be a very strong link between the rate of personal crime (domestic assault, non-domestic assault and sexual assault) and the proportion of Indigenous population. As the proportion of Indigenous population increases, the rate of total personal crime also increases. The relationship appears to be highly significant and troubling, as this type of violence appears to be closely associated with Indigenous population ($R^2=0.779$).

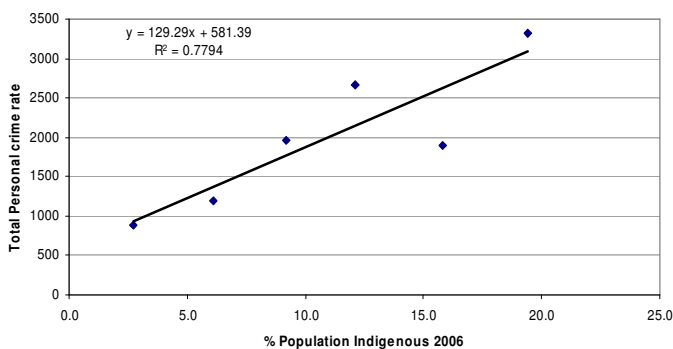


Figure 11.17: % of Indigenous Population By Total Personal Crime
Source: JSA (2007)





12. Relationship between Economic & Social Indicators

To see relationships between economic and social indicators we looked at the relationships between selected economic indicators (Index of Specialisation, % of employment, % of GRP (cotton), % of household income, and % of GRP (agriculture), produced by CARE) against selected social indicators as used above. The following table shows the relationships between these indicators and their significance.

While analysis of the relationship between the importance of cotton to the economy and indicators of well being such as employment generation would seem to be of interest, it is not possible to examine such relationships as the % of GRP has been calculated based on employment within the industry. An independent indicator of the impact of cotton, for example net income estimated from sale price and tonnages, or alternatively proportional use of resources by cotton of inputs such as land and water would be required to determine if cotton communities were better or worse off economically (in terms of employment or household income) because of cotton production.

The following sections look specifically at four of these relationships that appear to be significant based on the limited data set available.

	Index of Specialisation	% of employment	% of GRP (Cotton)	% of Household Income	% of GRP (Agriculture)
Median Household Income	As Median Household Income increases, Index of Specialisation decreases. High value of $R^2=0.79$.	Insignificant value of $R^2=0.00$.	Insignificant value of $R^2=0.00$.	Insignificant value of $R^2=0.00$.	With an increase in % of household income, there is a slight decrease in % of GRP (agriculture). ($R^2=0.06$)
% Population Change (2001 – 2006)	As index of specialisation decreases, population growth increases. People moving out of areas with high index of specialisation. ($R^2=0.53$)	Insignificant value of $R^2=0.01$.	Insignificant value of $R^2=0.01$.	Insignificant value of $R^2=0.00$.	Insignificant value of $R^2=0.01$.
% Population Indigenous 2006	Increasing indigenous pop with an increase in index of specialisation.	With an increase in the % of pop that are indigenous, increase in % of	As the % of GRP (cotton) increases, the % of population that are	As the % of household income increases, the % of	With an increase in % of population that are indigenous, there is an



	Index of Specialisation	% of employment	% of GRP (Cotton)	% of Household Income	% of GRP (Agriculture)
	(R ² =0.48)	employment. (R ² =0.47)	indigenous increases. (R ² =0.57)	population that are indigenous increases. (R ² =0.51)	increase in the % of GRP (agriculture) (R ² =0.75)
Median Age	Higher median ages with increasing index of specialisation. Younger pop leaving. Weak value of R ² =0.11.	Insignificant value of R ² =0.00.	Insignificant value of R ² =0.02.	Insignificant value of R ² =0.02.	Insignificant value of R ² =0.02.
SEIFA Disadvantage	Areas with high index of specialisation have lower SEIFA (disadvantage) values. (R ² =0.45)	Increasing SEIFA (disadvantage) values result in decreasing % of employment. (R ² =0.49)	As the % of GRP (cotton) increases, SEIFA (disadvantage) scores decrease. (R ² =0.61)	With a higher % of household income, the SEIFA (disadvantage) decreases. (R ² =0.55)	As the % of GRP (agriculture) increases, the SEIFA (disadvantage) score decreases. (R ² =0.71)
Skills Base - % of pop 15+ w/ trade or better qualifications	Insignificant value of R ² =0.01.	As skills base increases, % of employment increases. Weak value of R ² =0.12.	There is a slight increase in % of GRP (cotton) as the skills base goes up. Weak value of R ² =0.12.	As the skills base increases, the % of household income has a slight increase. Weak value of R ² =0.16.	With an increase in skills base, there is a slight increase in the % of GRP (agriculture). (R ² =0.16)
Labour Force Participation (15+)	With increasing index of specialisation, increase in labour force participants (15+). (R ² =0.39)	There is a slight increase in % of employment with increase in labour force participation (15+ yrs). (R ² =0.08)	As Labour Force participation (15+) increases there is a slight increase in % of GRP (cotton). (R ² =0.06)	Insignificant value of R ² =0.03.	Insignificant value of R ² =0.03.
Labour Force Participation (65+)	With higher Index of specialisation, increase in labour force participation (65+ yrs). Significant as	Increase in % of employment with increase in labour force participation (65+ yrs).	As labour force participation (65+) increases there is an increase in the % of GRP (cotton).	% of household income increases with an increase in labour force participation	With a higher labour force participation (65+), the % of GRP (agriculture) increases.





	Index of Specialisation	% of employment	% of GRP (Cotton)	% of Household Income	% of GRP (Agriculture)
Youth Unemployment	R ² =0.79	(R ² =0.36)	(R ² =0.33)	(65+). (R ² =0.25)	(R ² =57)
	With an increase in index of specialisation, youth unemployment increases. (R ² =0.28)	As % of employment increases, youth unemployment increases. (R ² =0.44)	As the % of GRP (cotton) increases, youth unemployment increases. (R ² =0.38)	With a higher % of household income, there is higher youth unemployment. (R ² =0.43)	With an increase in % of GRP (agriculture), youth unemployment increases. (R ² =0.61)
Voluntary work for an organisation	Areas of higher Index of Specialisation increase in voluntary work for an organisation. Significant with R ² =0.79	Insignificant value of R ² =0.00.	Insignificant value of R ² =0.03.	Insignificant value of R ² =0.02.	Insignificant value of R ² =0.00.

12.1. % of GRP (cotton) by SEIFA (disadvantage)

This graph looks at the relationship between the % of GRP (cotton) and SEIFA (disadvantage) scores. There appears to be a relationship between the two indicators with R²=0.6127. This relationship shows that as the % of GRP (cotton) increases the SEIFA (disadvantage) value decreases. Areas with high cotton production are likely to have low SEIFA (disadvantage) scores.

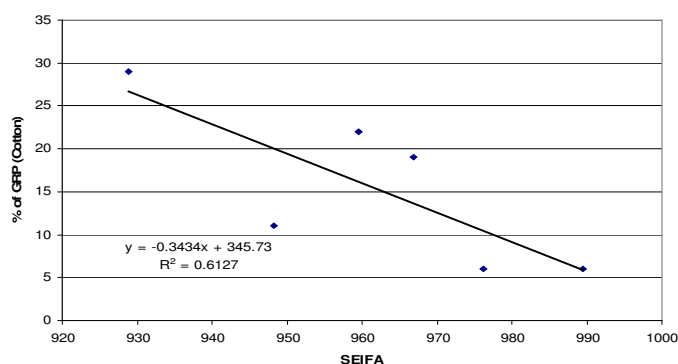


Figure 12.1: % of GRP (cotton) by SEIFA (disadvantage)
Source: JSA (2007) and CARE (2008)



12.2. % of GRP (agriculture) by SEIFA (disadvantage)

There is a strong relationship ($R^2=0.7125$) between the % of GRP (agriculture) and SEIFA (disadvantage). With an increase in the % of GRP (agriculture), there is a decrease in SEIFA (disadvantage) scores. Similarly to the relationship between % GRP (cotton) and SEIFA (disadvantage), it is likely that areas relying mainly on agricultural produce are going to have a lower SEIFA (disadvantage) score. Although based on a small sample size, a 1% increase in the cotton proportion of GDP leads is correlated with a three point decrease in SEIFA, whereas a 1% increase in the agriculture proportion of GDP leads is correlated with a two point decrease in SEIFA, and from a base around twenty SEIFA points higher.

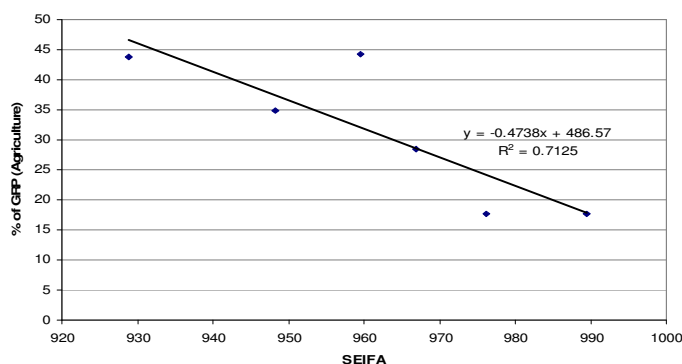


Figure 12.1: % of GRP (agriculture) by SEIFA (disadvantage)
Source: JSA (2007) and CARE (2008)

12.3. Index of Specialisation by Labour Force Participation: 65+ yrs

The relationship between the index of specialisation and labour force participation: 65+ yrs is strong with $R^2=0.7945$. The following graph shows that labour force participation increases with increasing index of specialisation. This is most likely a result of the older generations being more specialised than younger generations.



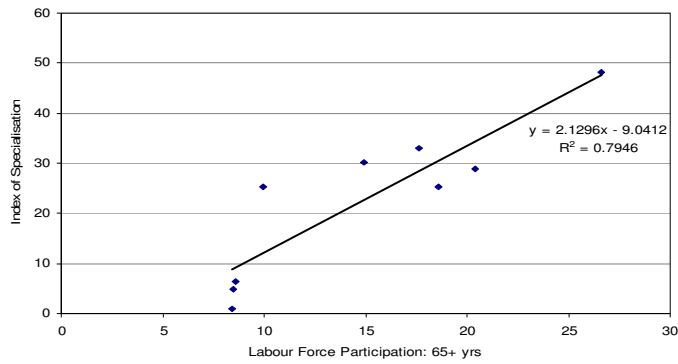


Figure 12.1: Index of Specialisation by Labour Force Participation: 65+ yrs
Source: JSA (2007) and CARE (2008)

12.4. Index of Specialisation by Voluntary Work for an Organisation

The following graph looks at the relationship between the index of specialisation and voluntary work for an organisation. It shows that there is a strong relationship between the two indicators with $R^2=0.7898$. As the index of specialisation increases, voluntary work for an organisation increases as well.

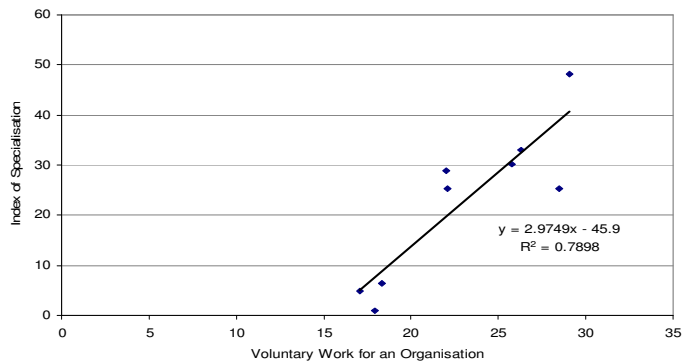


Figure 12.1: Index of Specialisation by Voluntary Work for an Organisation
Source: JSA (2007) and CARE (2008)



Appendix A1: Cotton Consultation Letter



JUDITH STUBBS & ASSOCIATES

ABN: 44 132 219 205
The Old Post Office
231 Princes Highway
Bulli NSW 2516
Phone: 02 4283 7300
Fax: 02 4283 7399
Email: info@judithstubbs.com.au

SOCIAL PLANNING & RESEARCH, SOCIAL & ECONOMIC IMPACT ASSESSMENT, CONSULTATION & FACILITATION

We are a social planning and research group working with the Centre for Agricultural and Regional Economics (CARE) and Edge Land Planning on a project for the **Cotton Catchment Communities CRC**.

The aim of the project is to measure and track the wellbeing of communities in cotton producing areas over time. To us, **community wellbeing** is related to the attributes of a community and its long-term capacity to be a place where people **want to live, can live, and prefer to live** compared to other areas.

So far, we've come up with a list of over 140 indicators to describe the wellbeing of a community. These include measures such as population change, employment, health behaviours, housing affordability, resident satisfaction and local business vitality – just to name a few!

We want to hear what you think about what we've come up with so far. As a member of the local community, you have the best understanding of what makes your community a great place to live, work and play – and what you think should be tracked to monitor the wellbeing of your community over time.

If you'd like to participate, please fill out the attached tick sheet that lists some of the main indicators we've come up with so far. Which indicators should we keep? Which ones should go? Which ones are the most important to you? What have we missed?

Once you've filled out the tick sheet, please return it by 9th November via fax, email or post:

Fax: 02 4283 7399
Email: info@judithstubbs.com.au

Judith Stubbs & Associates
The Old Post Office
231 Princes Highway
Bulli NSW 2516


If you have any questions or would like to find out more about the project, please ring us on: 02 4283 7300.

Thank you for your cooperation.

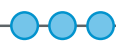


Dr Judith Stubbs









Appendix A2: Cotton Consultation Tick Shee

Indicators of Community Wellbeing

This is a list of indicators that can be used to track community wellbeing over time. Community wellbeing relates to qualities of a community that mean people want to live there, can live there and prefer to live there when compared with other areas. Data is available from a variety of sources including the Australian Bureau of Statistics, State and Federal departments, community organisations or by conducting a short survey.

For each indicator, tick 'Yes' if you think it **should be** included as a measure of wellbeing for your community. Next, indicate **how important** you think the indicator is for tracking wellbeing. At the end of the list, let us know if you have any ideas for indicators we may have missed.

Name: _____ Organisation: _____

Indicator	Tick for Yes	Level of Importance H = High, M = Medium, L = Low
Population		
Population Change over time <i>e.g. more or less older or younger people, or men or women over time</i>		
Population moving into or out of the area over time <i>e.g. change by age, income level, family type, cultural background</i>		
Employment, Training & Business Vitality		
Proportion of Jobs related to Agriculture <i>e.g. year round jobs and seasonal jobs for various groups</i>		
Skills Shortage for Key Workers <i>e.g. number of vacant positions for teachers, nurses, police, etc</i>		
Rate of Unemployment <i>e.g. among youth, men, women and Indigenous people</i>		
Proportion of Local Jobs filled by Local People		
Traineeships & Apprenticeships – Total number		
Traineeships & Apprenticeships – number related to Agriculture		
Local Business Vitality – number of Development Applications for New Businesses		
Local Business Vitality – number of Retail Outlets Operating		
Local Business Vitality – Amount of Vacant Retail & Commercial Space		
Income & Poverty		
Median household income (\$)		
Welfare recipients <i>e.g. % of population receiving various types of pension or benefits</i>		
Level of disadvantage & advantage (SEIFA)		
Housing		
Housing Cost – Rentals		
Housing Cost – Purchases		



Housing Tenure <i>% of properties that are owned, being purchased, rented publicly or privately, and vacant</i>		
Housing Affordability <i>% of households in lower 40% income level who spend more than 30% of their income on housing costs</i>		
Housing 'Stress' <i>% of households in poverty after paying their housing costs</i>		
Education & Information		
Skills Base – <i>e.g. % of population without formal qualification; who did not complete Yr 10</i>		
Skills Base <i>e.g. % of population with trade or better qualifications</i>		
Number of School Enrolments – Primary		
Number of School Enrolments – Secondary		
Number of School Enrolments – Year 11 & 12		
Number of Households with Broadband Internet		
Health		
Number of General Practitioners (GPs) per 1,000 people		
Health Behaviours – High level of Psychological Distress		
Health Behaviours – Smoking		
Health Behaviours – Smoking during Pregnancy		
Health Behaviours – Physical inactivity		
Health Behaviours – Alcohol use		
Cause of Death before Age 75 – Cancer (all types)		
Cause of Death before Age 75 – Cancer (trachea, lung, etc)		
Cause of Death before Age 75 – Respiratory diseases (eg. Asthma, Chronic Obstructive Pulmonary Disease)		
Cause of Death before Age 75 – Injuries & poisonings		
Cause of Death before Age 75 – Suicide		
Chronic Health Issues – Asthma		
Chronic Health Issues – Diabetes		
Chronic Health Issues – Musculoskeletal diseases (eg. Arthritis, neuromuscular disease)		
Chronic Health Issues – Mental and behavioural disorders		
Crime & Safety		
Property Related Crime - Stealing from retail store		
Property Related Crime - Malicious damage to property		
Interpersonal Crime – Domestic assault		
Interpersonal Crime – Non-domestic assault		





Drug & Alcohol Related Crime - Assaults occurring between 3 pm Friday - 3 am Monday		
Drug & Alcohol Related Crime – Drug use / possession / cultivation		
Vulnerable Populations		
Number of Child Care places available		
Number of Aged Care places available <i>e.g. Community Aged Care Packages (CACP), low care and high care places (nursing home or hostel places)</i>		
Community Engagement & Perceptions		
Participation in Voluntary Work for an Organisation or Group <i>e.g. unpaid work for groups related to sport, schools, churches, arts, hospitals, charities, emergency services</i>		
What residents think about their Quality of Life		
What residents think about Neighbourliness		
Perception about how willing locals are to work together		
How safe people feel at Home		
How safe people feel in their Neighbourhood		
Environment		
Health of Local Waterways (eg. Rivers and streams)		
Proportion of land in local area for environmental conservation & recreation <i>e.g. National Parks, State Forests, Council Reserves & parks</i>		
Number of Breaches of Environmental Regulations <i>e.g. fines issued to polluters for breaching permit regulations</i>		

You made it! Thank you for reviewing this list of community wellbeing indicators.

Have we missed any indicators that you think are important to measure for your community? Yes No

If so, what are they? Why are they important to you?

Are you interested in following the progress of this study? Yes No

What's the best way to contact you? _____

Please return by November 9th via email to: info@judithstubbs.com.au or by fax to 02 4283 7399.





Appendix B: Cotton Real Estate Survey

Community Wellbeing: Local Real Estate Survey

NAME:

DATE:

COMPANY:

TOWN:

RENTAL QUESTIONS

1. How would you describe the current rental market (e.g. tight, loose)?

2. What is your total residential rent roll (i.e. how many residential rental properties do you manage)?

3. How many of these properties are currently vacant / available for rental?

4. The median rental price in NSW is \$160 per week, what proportion of your rental properties are below \$160.00 per week?

And what proportion would you say are higher than \$160 per week?

5. What is the average rent price for a 1, 2, 3, and 4+ bedroom home in town?

Size of Home	In Town
1 Bedroom	
2 Bedroom	
3 Bedroom	
4+ Bedroom	

6. Who would you say are looking for rental properties? (eg. Young people, families, older people)

7. Where would you say these people are coming from? (eg. In town vs. out of town)





8. So would you say that rental supply is meeting demand?

9. How has the average rent paid for homes changed over the past year?

- a. Gone up significantly
- b. Gone up slightly
- c. Gone down significantly
- d. Gone down slightly
- e. Stayed the same

9. Why do you think this has been happening?

10. What about over the past 5 years?

- a. Gone up significantly
- b. Gone up slightly
- c. Gone down significantly
- d. Gone down slightly
- e. Stayed the same

9. Why do you think this has been happening?

SALES QUESTIONS

4. What is the current purchase price for different homes in town and out of town?

Size of Home	In Town
1 Bedroom	
2 Bedroom	
3 Bedroom	
4+ Bedroom	

11. How has the average purchase price changed over the past year?

- a. Gone up significantly
- b. Gone up slightly
- c. Gone down significantly
- d. Gone down slightly
- e. Stayed the same



9. Why do you think this has been happening?

12. What about over the past 5 years?

- a. Gone up significantly
- b. Gone up slightly
- c. Gone down significantly
- d. Gone down slightly
- e. Stayed the same

9. Why do you think this has been happening?

13. Who would you say are purchasing homes in your area?

Where are they coming from? (in or out of town)

14. Who would you say are selling?

15. Are you aware of any new developments for the local area that could create additional rental or purchase supply? Please provide details:

16. During cotton season are you aware of any shortage of accommodation for workers?

- a. Yes
- b. No
- c. Not sure

17. If yes, please explain:



Appendix C: Cotton Community Survey

Community Wellbeing: Community Survey

Basic Demographic Details

1. LGA (tick prior to interview):

- Narrabri Shire
- Moree Plains Shire
- Narramine Shire
- Warren Shire
- Dalby Town Shire
- Millmerran Shire

2. Gender:

- Male
- Female

3. Age Range:

- 0-14 yrs
- 15-24 yrs
- 25-34 yrs
- 35-44 yrs
- 45-54 yrs
- 55 +

4. Are you from an Indigenous background?

- Yes
- No
- No response
-

5. Is your work directly related to the cotton industry?

- Yes
- No

6. How long have you lived in the Narrabri area?

- Less than 2 yrs
- 2-4 years
- 5-9yrs
- 10-19 yrs
- 20-24 yrs
- 25 or more years

7. If yes, please describe your work:

8. Which town do you live in, or do you live in a rural area?

Perceived Quality of Life

9. How would you rate [LGA] area as a place to live?

- Poor
- Fair
- Neutral / Not sure
- Good
- Excellent

10. Overall, do you feel more positive (happy) or negative (unhappy) about living in [LGA] at the moment?

- Very positive
- Positive
- Neutral / Not sure
- Negative

11. Compared to last year, would you say that life in [LGA] has...





- Got worse
- Stayed the same
- Improved
- N/A – I was not living here last year.

12. What about compared to say, 5 years ago - has life in [LGA] ...

- Got worse
- Stayed the same
- Improved
- N/A – I was not living here 5 years ago.
- Very negative

13. What do you *like most* about living in [LGA]?

14. What do you *like least* about living in [LGA]?



Social Capital

Please read this list of statements and tick the box that most closely reflects how you feel about it.

#	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
15	Overall, I feel attached to living in this neighbourhood					
16	I feel like I belong to this neighbourhood					
17	I visit my neighbours in their homes					
18	I regularly stop and chat with people in my neighbourhood					
19	I would be willing to work together with others on something to improve my neighbourhood					
20	I feel that there is good local support for community events.					
21	I feel that people in my neighbourhood would conserve water and electricity if asked to					
22	I feel safe when I am alone in my home during the day					
23	I feel safe walking around my neighbourhood during the day					
24	I feel safe when I am alone in my home at night					
25	I feel safe walking around my neighbourhood during the night					

JUDITH STUBBS & ASSOCIATES



Perception of the Cotton Industry (or main industry for non-cotton communities)

26. The cotton industry has a *positive impact* on my community.

- Yes
- No
- Not sure

27. If yes, what are some of the *positive impacts* from the cotton industry on your community?

28. The cotton industry has a *negative impact* on my community.

- Yes
- No
- Not sure

29. If yes, what are some of the *negative impacts* from the cotton industry on your community?

30. Overall, do you think that the impact of the cotton industry on your community is more positive or more negative?

- More positive
- More negative
- Not sure



Appendix D1: Cotton Business Survey Letter





Appendix D2: Business Survey

Community Wellbeing: Local Business Survey

We are a social planning and research group working with the Centre for Agricultural and Regional Economics (CARE) and Edge Land Planning on a project for the Cotton Catchment Communities CRC. The aim of the project is to measure and track the wellbeing of communities in cotton producing areas over time. To us, **community wellbeing** is related to the attributes of a community and its long-term capacity to be a place where people **want to live, can live, and prefer to live** compared to other areas.

An important component of overall community wellbeing is the wellbeing of local businesses. As a local business, most likely you have a good sense of how things are going in your community, and a unique insight on the vitality of the local economy. This survey is designed to help us understand more about the vitality of local businesses by hearing about the work that you do and your plans for the future.

1. **Business Name:** _____

2. **Name & Position of person filling out survey:** _____

3. Please describe your business? ie. what do you do?

- | | |
|--|---|
| <input type="checkbox"/> Agriculture, Forestry & Fishing | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Manufacturing | <input type="checkbox"/> Electricity, Gas, Water and Waste Services |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Wholesale Trade |
| <input type="checkbox"/> Retail Trade | <input type="checkbox"/> Accommodation and food services |
| <input type="checkbox"/> Transport, Postal and Warehousing | <input type="checkbox"/> Information media & telecommunications |
| <input type="checkbox"/> Financial and Insurance services | <input type="checkbox"/> Rental, hiring and real estate services |
| <input type="checkbox"/> Professional, scientific and technical services | <input type="checkbox"/> Administrative & Support Services |
| <input type="checkbox"/> Public administration & safety | <input type="checkbox"/> Education and training |
| <input type="checkbox"/> Health care and Social assistance | <input type="checkbox"/> Arts and recreation services |
| <input type="checkbox"/> Other (Please specify) _____ | |

4a. **How many full-time employees do you have?**
 1 2-5 6 - 10 > 11

4b. **Does the number of full-time employees change throughout the year?**
 Yes No Not sure

4c. **If Yes, how does the number change throughout the year?**

5a. **How many part-time employees do you have?**
 1 2-5 6 - 10 > 11

5b. **Does the number of part-time employees change throughout the year?**
 Yes No Not sure

6. **How has the total number of employees changed in the past year?**
 Grown Decreased Stayed the same

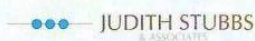
7. **Do you have trouble either attracting or retaining skilled employees?**
 Yes No N/A – Does not apply to my business

7b. **If yes, please explain why / how you have trouble attracting or retaining skilled employees:**

8a. **Do you have current vacancies in employment?**
 Yes No N/A – Does not apply to my business

8b. **How many positions are currently vacant?**
 1 2 – 5 >5

8c. **What do you think is the main reason for your current vacancies?**





9. Where are your main markets? Please apportion to 100%

Local <i>(Limited to the town in which business is located)</i>	
District <i>(e.g. To neighbouring areas such as Moree Plains Shire LGA)</i>	
Regional	
NSW	
Interstate	
International	

10a. What are your intentions for your business in the next five years?

- Grow Stay the same Retire Downsize

10b. What is your main reason for this intention?

10. Which other industries do you think you compete with for employees?

- | | |
|--|---|
| <input type="checkbox"/> Agriculture, Forestry & Fishing | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Manufacturing | <input type="checkbox"/> Electricity, Gas, Water and Waste Services |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Wholesale Trade |
| <input type="checkbox"/> Retail Trade | <input type="checkbox"/> Accommodation and food services |
| <input type="checkbox"/> Transport, Postal and Warehousing | <input type="checkbox"/> Information media & telecommunications |
| <input type="checkbox"/> Financial and Insurance services | <input type="checkbox"/> Rental, hiring and real estate services |
| <input type="checkbox"/> Professional, scientific and technical services | <input type="checkbox"/> Administrative & Support Services |
| <input type="checkbox"/> Public administration & safety | <input type="checkbox"/> Education and training |
| <input type="checkbox"/> Health care and Social assistance | <input type="checkbox"/> Arts and recreation services |
| <input type="checkbox"/> Other services | |

**11a. What do you think are the direct issues affecting your business?
Please tick the three most important:**

- | | |
|--|---|
| <input type="checkbox"/> Petrol Prices | <input type="checkbox"/> Drought |
| <input type="checkbox"/> Other input prices | <input type="checkbox"/> Succession Planning |
| <input type="checkbox"/> Unskilled workforce | <input type="checkbox"/> Industrial relations |
| <input type="checkbox"/> Market outlook/uncertainty | <input type="checkbox"/> Technology |
| <input type="checkbox"/> Interest rates | <input type="checkbox"/> Proximity to Markets |
| <input type="checkbox"/> Other (Please describe below) | |

11b. If you indicated 'other', please explain:

12. Is there anything else you think we should know about local business vitality in your community?

13. Would you like to receive further information about this project?

- Yes No

14. What is the best way to contact you?

Phone: _____

Email: _____

Fax: _____

Post: _____

Thank you for your time and assistance completing this survey!