

West Moreton early childhood development

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Executive summary

Purpose

This report presents Australian Early Development Census (AEDC) data to indicate levels of demand for Kambu's Aboriginal and Torres Strait Islander Children and Family Centre (CFC) services in the rural parts of West Moreton region.

It focuses on the five AEDC domains of early development including: physical health; social competence; emotional maturity; language and cognitive skills; and communication skills and general knowledge.

A social and economic profile is provided to support this analysis.

Social and economic profile

The study area is a highly diverse region, including large rural/agricultural areas and some areas of rapid urban population growth.

Many parts of the study area show high levels of socioeconomic disadvantage, unemployment, and poor health. This is likely to impair the functioning and stability of affected families and present them with challenges for early childhood development.

The study area is part of the traditional lands of the Jagera, Yuggera and Ugarapul peoples. Aboriginal and Torres Strait Islander people form a small but rapidly-growing part of the study area population.

AEDC findings

At 2012, prep-year children in the study area showed relatively high rates of "risk" and "vulnerability" on most AEDC domains.

There was wide diversity in these results across the study area sub-regions. The results were dominated by very high rates of vulnerability in the heavily populated (and rapidly growing) Lockyer Valley - East Area (centred on Laidley and Plainland). Boonah and Lowood showed relatively lower rates of vulnerability.

Aboriginal and Torres Strait Islander people were significantly more vulnerable on almost all AEDC domains of development.

Implications for Kambu service delivery

AEDC statistics indicate relatively high levels of potential demand for Kambu CFC (and other) services proportional to the size of the population. In absolute terms, most of this demand would be concentrated in the heavily-populated corridor between Lowood, Plainland and Laidley.

Aboriginal and Torres Strait Islander children appear to face unique early development challenges that would be best met with culturally appropriate outreach CFC services.

Planning for responsive CFC service delivery would be greatly reinforced by in-depth validation of these results (such as through community consultation with study area residents and service providers).

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Appendices

Appendix 1: Introduction to the AEDC

Glossary and abbreviations

ABS	Australian Bureau of Statistics
AEDC	Australian Early Development Census
ASGS	Australian Statistical Geography Standard
ATSI	Aboriginal and/or Torres Strait Islander
CFC	Children and Family Centre
ERP	Estimated resident population
IRSD	Index of Relative Socioeconomic Disadvantage
PHIDU	Population Health Information Development Unit
QGSO	Queensland Government Statistician's Office
QRSIS	Queensland Regional Database
SA2	Statistical Area Level 2
SEIFA	Socio-economic Indexes for Areas
SEQ	South East Queensland
UCL	Urban Centre/Locality

Acknowledgement

The author and Kambu Aboriginal and Torres Strait Islander Corporation for Health gratefully acknowledge the Traditional Owners past and present of the study area, including the Jagera, Yuggera and Ugarapul People, as well as all current residents. We commit this small piece of work to a peaceful and inclusive future for our children.

1 Introduction

1.1 Background

In early 2015, Kambu Aboriginal and Torres Strait Islander Corporation for Health (Kambu) identified a need for evidence of early childhood health and education outcomes in and around Gatton, in support of planning for Aboriginal and Torres Strait Islander Children and Family Centre (CFC) services. Kambu contracted Jon Zemlicoff in May 2015 to report on relevant quantitative indicators of early childhood development.

Kambu identified the Australian Early Development Census (AEDC) as a principal source of intelligence. The AEDC is designed by the Australian Government and its partners to “provide an insight at a community level into the learning and development needs of young children”¹. AEDC data offer a useful indication of need for Kambu’s CFC and health services.

1.2 Purpose

This report presents AEDC data in evidence of early childhood development outcomes in Gatton and the nearby rural parts of the West Moreton region as an indicator of demand for Kambu’s Aboriginal and Torres Strait Islander CFC services. It draws more widely on public data sources identified by Kambu and the author to provide local and analytical context for the primary AEDC indicators.

The organisational outcomes identified by Kambu for this report are:

- Support Kambu’s understanding of Aboriginal and Torres Strait Islander early childhood health and education needs in West Moreton
- Support Kambu’s strategic investment planning in mobile and fixed CFC facilities.

Section 2 provides a brief social and economic profile of the study area, and Section 3 presents key findings from the AEDC. Conclusions and recommendations follow. A brief technical account of the AEDC is provided at Appendix 1.

More information

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¹Commonwealth of Australia, AEDC website

1.3 Methodology

Data sources

The 2012 AEDC constitutes the principal data source for this study. AEDC data are based on the qualitative assessment of most Prep-year school children (4–6 year-olds²) by their teachers against the following five domains of early childhood development:

- Physical health
- Social competence
- Emotional maturity
- Language and cognitive skills and
- Communication.

For each domain, every student receives a score, and is then categorised as “on track” (high scores) “at risk” (low scores indicating some developmental deficit) or “vulnerable” (very low scores below the 10th percentile indicating serious developmental problems). For the purpose of this study, this provides insight into both the prevalence and severity of developmental challenges faced by children in the study area (defined in detail below).

This report primarily draws on a custom AEDC data set provided by the Australian Government for the purpose. The custom data set disaggregates standard public-release AEDC data for Kambu’s service delivery area by Indigenous status.

The AEDC data presented at Section 3 are based on the assessment of 879 study area school children in the Prep year in 2012 (50 of whom were Aboriginal and Torres Strait Islander). By Queensland Government Statistician’s Office (QGSO) estimates, Aboriginal and Torres Strait Islander children were assessed at a considerably lower rate (72.5 per cent of the total population) than average (86.3 per cent). This defined study group is variously referred to as the “children” or “students” of the study area throughout this report.

Table 1-1 AEDC assessments, children aged 4–6 years, study area 2012

SA2	Children assessed	Total children ^a	% Total children assessed ^b
ATSI	50	69	72.5
Total population	829	961	86.3

Source: Commonwealth of Australia (2013); QGSO, Queensland Regional Database

a Estimated as the average of 2012 ERP figures for birth years 2006 and 2007, based on Queensland Government population estimates published by QGSO (a small number of these children may not have been enrolled at school).

b This calculation differs from the corresponding figure published by AEDC, which is based on eligible enrolments; that figure was not requested with the custom data set for Aboriginal and Torres Strait Islander children as it provides little technical value for the purpose of this report.

Other socio-demographic indicators (e.g. those presented in the Social and Economic Profile at Section 0) are drawn from relevant public sources such as the Australian Bureau of Statistics (ABS) and Queensland Government agencies.

This study contains no primary research component.

² See <https://www.qld.gov.au/education/> for information on enrolment ages

Geography

In support of Kambu's identified operational and strategic planning priorities, this study addresses the rural areas roughly surrounding the towns of Gatton, Esk and Boonah within the West Moreton³ region. This area is defined for the study as a collection of Statistical Area Level 2 regions (SA2s) as they are established by the Australian Bureau of Statistics (ABS) Australian Statistical Geography Standard⁴ (ASGS). They are listed at Table 1-2. An indicative map of the study area and relevant local centres is provided at Figure 1-1.

Table 1-2 Study area SA2s

SA2 Name	SA2 five-digit code
Boonah	31277
Esk	31278
Lockyer Valley - East	31280
Lowood	31281
Gatton	31448
Lockyer Valley - West	31451

Some quantitative indicators are reported by different geographies. Population health indicators are reported at Section 2.7 by Population Health Areas. These are aggregates of SA2s established by the Public Health Information Development Unit. They provide a close representation of the study area but include the Lake Manchester and Rosewood areas (semi-rural areas north and west of metropolitan Ipswich respectively). Other minor deviations from the study area geography are made in the Social and Economic Profile.

Analytical approach

Section 3 reports key statistics from the AEDC for the study area structured according to the AEDC's five developmental domains. According to Kambu's organisational objectives for this study, AEDC data has been presented to offer comparisons of early childhood development outcomes between:

- Aboriginal and Torres Strait Islanders and the total population (cultural effects)
- the total study area and Queensland (regional spatial effects⁵)
- study area SA2s (local spatial effects and patterns of need).

Indication is also provided of the total population of "at risk" and "vulnerable" children to serve as a proxy measure of absolute demand for Kambu's CFC services⁶.

AEDC indicators have been selected as self-evidently representative of early childhood development outcomes related to Kambu's operational objectives; as such, analytical commentary is minimal and descriptive in nature.

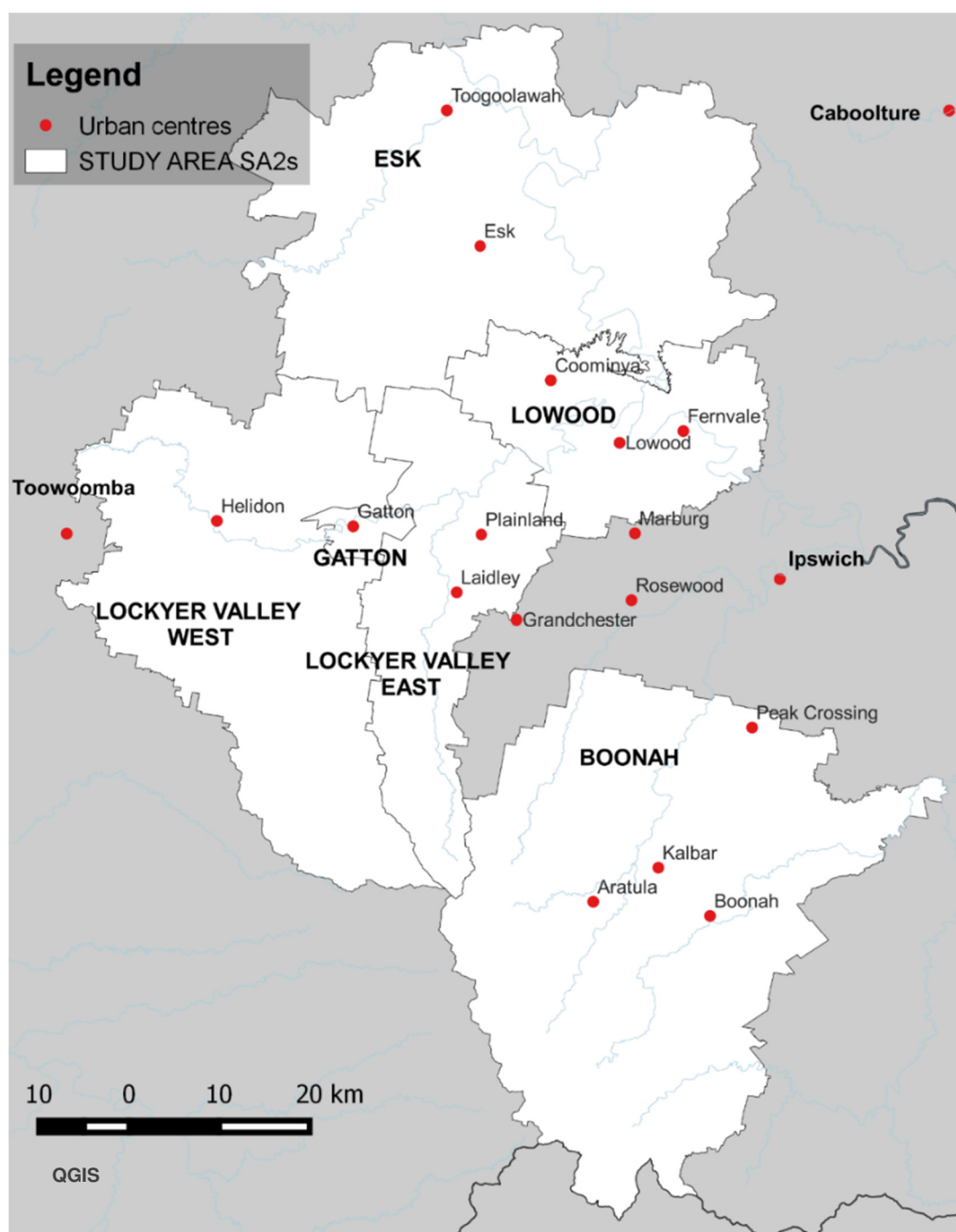
³ "West Moreton" typically refers to the area west of the Brisbane metropolitan area including Somerset Region, Lockyer Valley Region, the Boonah area and all (or sometimes the western part) of Ipswich.

⁴ For details see ABS (2011) Cat. 1270.0.55.001

⁵ Spatial effects are differences in early childhood development outcomes across geographic locations (from the term "space").

⁶ The assumption is that Kambu's 0–8 years target group is ideally seen as all children who require support to get "on track" developmentally in health and education terms.

Figure 1-1 Study area by Statistical Area Level 2



Data quality

All indicators reported herein are quantitative in nature⁷ and have been copied or calculated from source without material adjustment. Data quality is assumed to be high based on the professional standards of the custodian agencies, with due recognition of technical notes. Neither Kambu nor Jon Zemlicoff take any responsibility for the accuracy of data beyond diligence in reporting.

⁷ Notwithstanding the qualitative assessments underpinning the AEDC data.

Small counts of children (and particularly Aboriginal and Torres Strait Islander children) within study area SA2s are acknowledged as somewhat problematic to AEDC analysis. In particular, the number of Aboriginal and Torres Strait Islander children assessed in the SA2 of Esk was small enough (i.e. less than four) to be omitted from the results according to AEDC's data confidentiality procedures. For the purpose of this study, the AEDC remains the best available indicator of early childhood development outcomes. Given the "census" approach of the AEDC, even small counts provide meaningful intelligence. Conclusions and recommendations are appropriately modest nevertheless.

Limitations

This report avoids causal attributions and qualitative judgements where possible. It is important to note that further detailed research would be required to gain an understanding of:

- why cultural and spatial disparities in early childhood development outcomes exist in the study area, and
- how developmental deficits might be experienced and perceived by individuals, communities and cultural groups in the study area; this study is objective by nature and does not seek to represent the attitudes of residents or service providers in the study area.

While all data are presented faithfully and accurately, this study makes no attempt to assess the empirical validity or reliability of custodian agencies' methodologies.

This study does not address the "supply side" capacity, quality or appropriateness of early childhood health and education services currently (or planned to be) delivered in the study area nor their impacts upon the indicators presented.

While data presented herein appear to suggest some relationship between health, education and socioeconomic outcomes (particularly in the Lowood–Laidley corridor), no statistical significance or causality is implied. It is likely that other geographic relationships exist beyond the scope of this study; for example, health and social indicators are likely to diverge significantly between study area townships (Gatton, Esk, Lowood, Laidley, Boonah) and their rural hinterlands.

2 Social and economic profile

2.1 Population

Total population

At 2014 the study area had a total population of 68,582 dispersed reasonably evenly across the six component SA2s, with the exception of the large population in the urban-fringe corridor through Lowood and Lockyer Valley - East. Annual population growth averaged 1,458 persons or 2.4 per cent over the 10-year period to 2014. Total populations for the study area SA2s are provided at Table 2-1.

Table 2-1 Population indicators, study area SA2s

SA2	ERP ^a June 2014	% Total ERP	Popn growth 2004-14	Popn growth rate
Boonah	11,681	17.0	1,628	1.5
Esk	5,042	7.4	635	1.4
Lockyer Valley - East	19,624	28.6	5,643	3.4
Lowood	13,545	19.8	3,492	3.0
Gatton	7,651	11.2	1,496	2.2
Lockyer Valley - West	11,039	16.1	1,690	1.7
Study area total	68,582	100.0	14,584	2.4

Source: ABS (2015) Cat. 3218.0
a Estimated resident population

Aboriginal and Torres Strait Islander population

The population of Aboriginal and Torres Strait Islander people in the study area was estimated at 2,162 persons at 2013, or 3.2 per cent of the total population (Table 2-2) (this compares with 4.3 per cent across Queensland). The Aboriginal and Torres Strait Islander population of the study area grew almost twice as rapidly as the total population in the five preceding years (albeit from a far smaller base). Table 3.1 summarises Aboriginal and Torres Strait Islander population indicators for the study area.

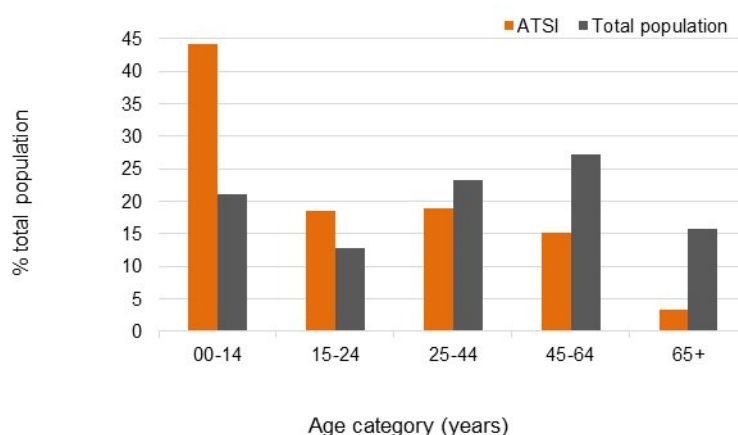
Table 2-2 Aboriginal and Torres Strait Islander Population indicators, study area SA2s

SA2	ERP 2013			ERP growth 2008-2013 (%)	
	ATSI persons	Total persons	ATSI % total	ATSI persons	Total persons
Boonah	225	11,363	2.0	4.2	1.1
Esk	137	5,021	2.7	3.0	1.3
Lockyer Valley - East	815	19,257	4.2	7.0	3.1
Lowood	442	13,052	3.4	3.5	3.2
Gatton	227	7,581	3.0	0.9	3.1
Lockyer Valley - West	316	10,816	2.9	3.9	1.6
Study area	2,162	67,090	3.2	4.5	2.4
Queensland	198,206	4,656,803	4.3	2.5	2.0

Source: QGSO, Queensland Regional Database

The relatively rapid growth of the study area Aboriginal and Torres Strait Islander population suggests a high crude birth rate⁸, consistent with a proportionately large 0–14 years age category (Figure 2-1).

Figure 2-1 Age profile, study area 2013



Source: QGSO, Queensland Regional Database

There were 414 Aboriginal and Torres Strait Islander children aged 0–8 years living in the study area in 2013, representing 5.9 per cent of the total 0–8 years population of 6,967 (Table 2-3).

Table 2-3 Population aged 0–8 years, study area SA2s 2013

SA2	ATSI	Total Population	ATSI % total
Boonah	35	1,222	2.9
Esk	23	451	5.1
Lockyer Valley - East	119	1,950	6.1
Lowood	103	1,414	7.3
Gatton	59	763	7.7
Lockyer Valley - West	75	1,167	6.4
Study area	414	6,967	5.9

Source: QGSO, Queensland Regional Database

2.2 Character and identity

The study area lies on the south-western fringe of the South East Queensland (SEQ) metropolitan area and is characterised by rural and peri-urban development. It is dominated by agricultural uses and open space interspersed by small rural towns and villages. Community lifestyles and identities in the study area reflect this traditional rural character and the agricultural productivity of the area⁹.

⁸ Migration effects probably have some far smaller impact on the difference in population growth rates between Aboriginal and Torres Strait Islanders and the total population.

⁹ Lockyer Valley Regional Council (2013)

Aboriginal and Torres Strait Islander cultural identities

The study area lies within the western boundaries of the Jagera Nation which roughly aligns with the southern part of Brisbane City; Ipswich; and the Fassifern, Lockyer and Brisbane Valleys¹⁰. Jagera, Yuggera and Ugarapul are recognised as Traditional Owners and custodians of the study area land. A post-colonial history of relocation (notably related to the Deebing Creek and Purga missions in western Ipswich¹¹) has contributed to a diverse and complex fabric of Aboriginal and Torres Strait Islander community identities in the area today.

2.3 Population centres

Population centres in the study area service the agricultural industry over adjacent subregional catchments which loosely correspond to the study area SA2s. They each relate culturally and economically to the nearby major centres of Toowoomba (Gatton and West Lockyer) and Ipswich/Brisbane (Esk, Laidley and Boonah). The populated area centred on Plainland is distinct from this pattern in that migratory population growth has rendered it more contiguous with the urban extents of Ipswich in the east. Though Plainland (and surrounds) and Gatton are the most populated urban areas, there is no single recognised administrative or cultural centre to the entire study area region.

Table 2-4 Population by Aboriginal and Torres Strait Islander Status, study area centres 2011

Urban centres and localities ^a	ATSI		Non-ATSI		Total No.
	No.	% UCL total	No.	% UCL total	
Plainland area ^b	242	3.9	6,025	96.1	6,267
Gatton	170	2.8	6,011	97.2	6,181
Laidley-Laidley Heights	164	3.7	4,271	96.3	4,435
Lowood	130	4.1	3,016	95.9	3,146
Boonah	48	1.9	2,425	98.1	2,473
Fernvale	43	2.4	1,776	97.6	1,819
Esk	36	2.9	1,215	97.1	1,251
Toogoolawah	26	2.7	935	97.3	961
Minden Village	17	2.3	720	97.7	737
Kalbar	20	2.8	703	97.2	723
Coominya	21	3.7	540	96.3	561
Aratula	6	1.2	500	98.8	506
Harrisville	8	1.9	421	98.1	429
Peak Crossing	7	1.8	389	98.2	396
Forest Hill	10	2.5	383	97.5	393
Total urban	948	3.1	29,330	96.9	30,278

Source: QGSO, Queensland Regional Database

^a Defined as ASGS Urban Centres/Localities

^b Includes the UCLs of Kensington Grove-Regency Downs, Plainland (L), Glenore Grove (L), Brightview (L) and Lockrose (L)

Almost half of all study area residents (48 per cent or approximately 30,000 persons) live within recognised urban centres and localities. This figure is higher for the Aboriginal and Torres Strait

¹⁰ Native Title Tribunal (2007); further commentary in this source regarding the historical complexity of Traditional Ownership between Jagera and Turrbal Nations is acknowledged.

¹¹ Ipswich City Council website

Islander population (over 57 per cent or 948 persons) (QGSO, 2015). Table 2-4 shows urban centre populations broken down by Aboriginal and Torres Strait Islander status.

Urban development

A rapid influx of new residents to the study area has persisted over recent decades. Migratory population growth in the study area has centred on the growing centres of Plainland, Laidley, Gatton and southern Somerset Region (see Section 2.1 for population statistics). While this local phenomenon has not been the subject of much detailed research, it is representative of broader trends of migration towards affordable housing on the fringes of Australia's metropolitan areas¹². There is little doubt that it has been driven in part by housing stress in the SEQ metropolitan area, and some localised socioeconomic impacts and deficits in human services (particularly in relation to transport services and access) have been reported as a result¹³.

2.4 Transport

The study area is intersected by major state and national highways including the Warrego Highway (Brisbane–Toowoomba via Gatton), the Cunningham Highway (Brisbane–Warwick via Boonah) and the Brisbane Valley Highway (through Fernvale and Esk). All population centres are passed in close proximity. Public transport is limited to low-frequency bus services and community transport connecting some population centres, with rural areas of the study area virtually inaccessible by this mode. Queensland Rail (Translink) services extend as far as Rosewood in western Ipswich¹⁴ but do not penetrate the study area.

2.5 Socioeconomic status

Socio-economic inferences based on weekly income data are likely to be problematic for the study area due to the irregular income patterns of agricultural producers. The ABS Socio-Economic Indexes for Areas (SEIFA) provides a more complete understanding.

Low Index of Relative Socioeconomic Disadvantage (IRSD) scores for most SA2s in the study area suggest a significant degree of socioeconomic disadvantage (Figure 2-2). This disadvantage is most profound in the SA2s of Gatton, Esk, Lockey Valley East and Lowood where IRSD scores are all very low by Queensland standards (10th to 22nd percentiles). While there appears to be significantly less disadvantage in Boonah and Lockyer Valley - West, scores for both areas are nevertheless below the Queensland median.

The distribution of socioeconomic disadvantage across the study area is indicated at a detailed level at Figure 2-2. It is immediately clear that disadvantage is most prevalent in the urban centres, particularly in the more heavily populated corridor from Lowood (and nearby Coominya) to Laidley. Other pockets of disadvantage are visible around Gatton, north of Esk and east of Boonah¹⁵.

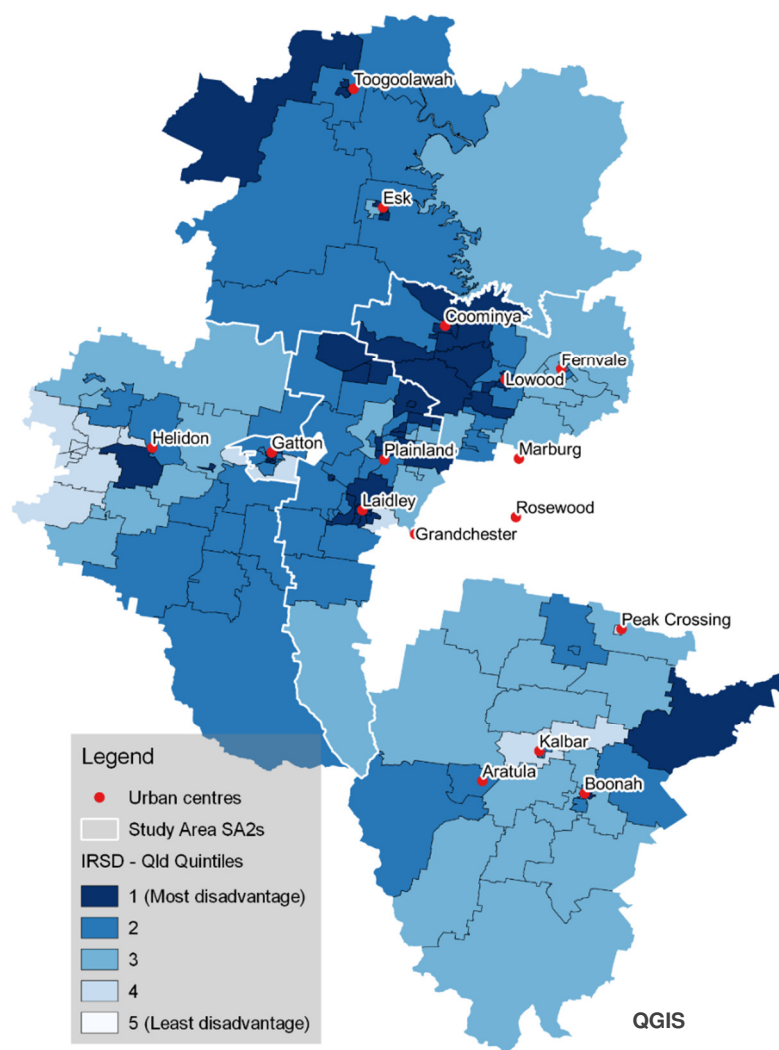
¹² The Australian Housing and Urban Research Institute has long published research papers describing these phenomena (Berry, 2006 and Yates et al, 2007) including some analysis of the Queensland context (Davison et al, 2012).

¹³ Departments of Communities and Queensland Corrective Services (2007)

¹⁴ Translink (2014)

¹⁵ Socioeconomic disadvantage east of Boonah is likely to be more associated spatially with communities through Jimboomba and northern Beaudesert than with Boonah or the larger Study Area.

Figure 2-2 Index of Relative Socioeconomic Disadvantage¹⁶, study area 2011



Source: ABS (2013) Cat. 2033.0.55.001

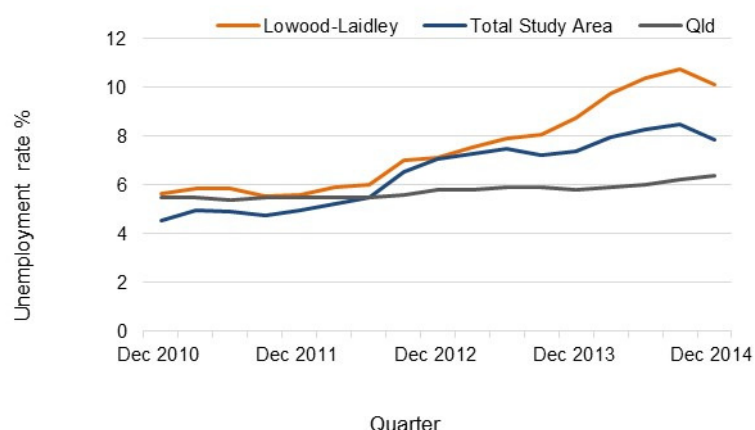
Unemployment (which is a factor to the calculation of IRSD so should not be interpreted as a perfectly distinct indicator of socioeconomic disadvantage) has increased in recent years across the study area, and remained higher than the Queensland average since late 2012¹⁷. Figure 2-3 demonstrates the recent severity of unemployment in the Lowood–Laidley corridor.

By these indicators, it can be inferred that the study area has a relatively low socio-economic status profile on average, and a large part of this effect is localised to some population centres.

¹⁶ Thematic SEIFA maps must be interpreted carefully. Significant demographic and spatial diversity can be obscured by regional structures.

¹⁷ QGSO, Queensland Regional Database

Figure 2-3 Unemployment rate, study area December 2010–2014 (quarterly, smoothed)



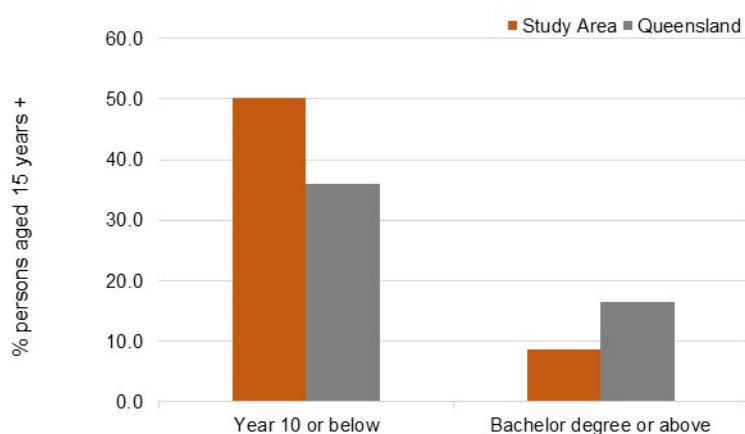
Source: QGSO, Queensland Regional Database

2.6 Education

Less than 50 per cent of study area residents aged 15 years and over have completed schooling beyond a year 10 high school education (Figure 2-4). This figure is significantly lower than the Queensland average of around 65 per cent. Those in the study area are only around half as likely (8.7 per cent) to have completed a bachelor or higher degree as the Queensland average.

While the low level of formal educational attainment in the study area population reflects the rural economic base, it is also likely to be associated in part with low socioeconomic status and high unemployment in the rapidly growing Lowood–Laidley corridor.

Figure 2-4 Educational attainment, selected indicators, study area 2011



QGSO, Queensland Regional Database

2.7 Health

Table 2-5 and Table 2-6 contrast selected health indicators¹⁸ for areas aligning closely with the study area against the Queensland average for the 2011–13 period. For easy comparison, each indicator is standardised to a score of 100 for Queensland.

Health risk factors

Personal health risk factors are more prevalent in the study area than the Queensland average. Smoking rates are significantly elevated, particularly in the Esk/Lowood–Laidley areas and obesity is common in all areas but Boonah/Rosewood. Problematic drinking rates are elevated, but to a lesser degree, across the study area.

Table 2-5 Health risk factors, selected indicators, Population Health Areas, 2015

Population Health Area	Current smokers	High alcohol consumption	Obese
Boonah/Rosewood	110	108	108
Esk/Lake Man//Lowood	122	106	112
Lockyer Valley - East	127	106	125
Gatton/Lock. Valley - West	105	107	113
Queensland	100	100	100

Source: PHIDU (2015, indicative colour-coding added)

Health status

The health of study area residents is generally poorer than that of the average Queenslanders. Self-reported health is worse across the study area, and significantly worse in the Esk/Lowood–Laidley areas. The prevalence of mental/behavioural and respiratory conditions is slightly elevated across the study area. The (typically) lifestyle-related conditions of diabetes mellitus and high blood cholesterol are marginally less common throughout the study area with the single exception of a very high prevalence of diabetes in in Esk/Lowood area.

Table 2-6 Health outcomes, selected indicators, Population Health Areas, 2015

Population Health Area	Poor-fair health ^a	Diabetes mellitus	High blood cholesterol	Mental/behavioural	Respiratory diseases	Avoidable deaths ^b
Boonah/Rosewood	110	95	99	99	111	87
Esk/Lake Man//Lowood	123	128	97	117	113	129
Lockyer Valley - East	124	97	97	113	108	118
Gatton/Lock. Valley - West	112	98	100	105	109	125
Queensland	100	100	100	100	100	100

Source: PHIDU (2015, indicative colour-coding added)

a Self-reported

b Data are for 2011–13

¹⁸ Data provided in these tables are Population Health Information Development Unit (PHIDU) Age Standardised Rates per 100 (ASRs) for PHIDU Population Health Areas (PHAs), further standardised to a Queensland score of 100. Each PHA score can be interpreted as a measure of the prevalence of a particular health problem by comparison with the Queensland average. Scores are colour-coded indicatively in bands of 20 (+ or - Queensland average). Higher scores (in red) indicate poorer health status.

The rate of avoidable deaths (due to all causes including lifestyle and preventable diseases, accidents etc) is very high in Esk/Lowood and Gatton, and high in Lockyer Valley - East. Relatively few avoidable deaths were recorded in Boonah in 2011–13.

2.8 Implications for interpreting the AEDC data

Data presented throughout Section 0 suggest that some sectors of the study area community are likely to be at risk of social and economic marginalisation (i.e facing reduced access to education, employment, social and cultural participation) and face real challenges to health and early childhood development. Key considerations include:

- The study area exhibits high levels of socioeconomic disadvantage and unemployment compounded by a lack of transport options. This is likely to impair the functioning and stability of affected families, and elevate demand for CFC, health and other community support services.
- Aboriginal and Torres Strait Islander People form a small but rapidly-growing part of the study area population. Early childhood development trends associated with the Aboriginal and Torres Strait Islander status are likely to be amplified while this effect continues.
- Socioeconomic disadvantage is concentrated in the corridor of rapid urban development between Lowood and Laidley, with smaller pockets centred on other urban centres. Demand for community support services is likely to continue to expand with population growth in these areas.
- Socioeconomic disadvantage in the study area appears to be spatially correlated with (and is possibly perpetuated by) both low education levels and poor health outcomes¹⁹. This suggests a complex relationship between health and social outcomes in some study area localities that requires sophisticated service responses.
- Health status is generally poor across the study area and high-risk lifestyles and behaviour are common. Poor behaviours and values around health are likely to present inter-generational barriers to early childhood development.

¹⁹ That is, socioeconomic disadvantage is consistently “worse” in geographic areas where the education levels and health outcomes of local residents are poorer. The conclusion that there is some common causality among those factors seems straightforward but would require analysis beyond the scope of this report.

3 Australian Early Development Census indicators

3.1 Physical health and wellbeing

The AEDC physical health and wellbeing domain measures children's physical capability and readiness for school. Children are assessed as developmentally vulnerable on this indicator if they are often physically unready for school (e.g. late, hungry or tired), are not physically capable of meeting their personal needs, or have delays to their gross and fine motor skills.²⁰

There were 278 children in the study area assessed as "at risk" or "vulnerable" on the physical health and wellbeing domain at the 2012 AEDC, of which 22 were Aboriginal and Torres Strait Islander (Table 3-1).

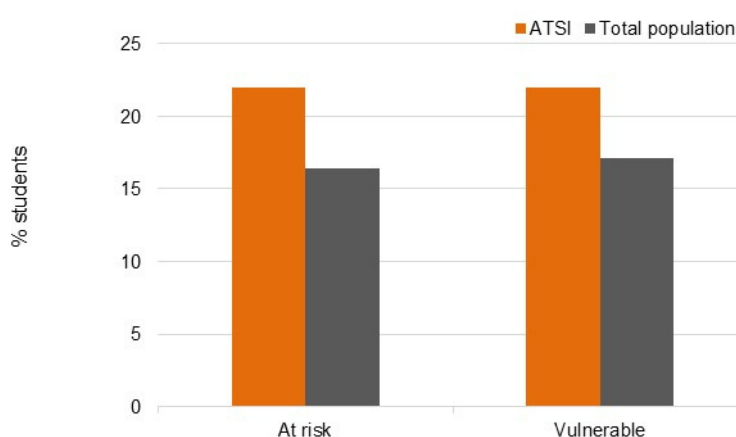
Table 3-1 AEDC assessment: Physical health and wellbeing, study area 2012

	At risk or vulnerable	Total assessed
Aboriginal and Torres Strait Islander	22	50
Total children	278	829

Source: Commonwealth of Australia (2013)

Aboriginal and Torres Strait Islander children in the study area were more likely to be assessed as either "at risk" or "vulnerable" on the physical health and wellbeing development domain than average (44 per cent in total, compared with 33.5 per cent for all children) (Figure 3-1).

Figure 3-1 Aboriginal and Torres Strait Islander comparison: physical health and wellbeing, 2012



Source: Commonwealth of Australia (2013)

²⁰ AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

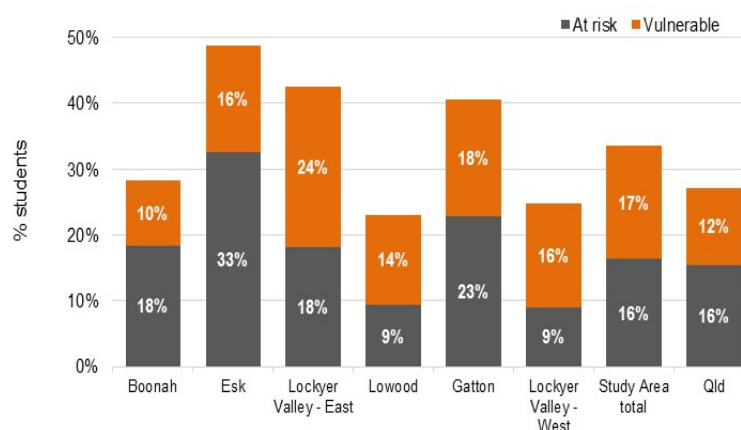
On average, vulnerability to physical health and wellbeing developmental delays in the study area was higher than for Queensland. Assessments in the less-severe “at risk” category were typical (Figure 3-2).

A very high proportion of children (24 per cent) in Lockyer Valley – East were assessed as developmentally vulnerable in terms of physical health and wellbeing. This was significantly higher than the study area average and twice as high as the Queensland average.

Esk and Gatton also recorded very high combined rates of “at risk” and “vulnerable” assessments. In Esk (contrary to the study area average) this was due largely to a very high proportion of children assessed as “at risk”. Nearly half of all children in Esk were assessed as at risk or vulnerable on the physical health and wellbeing domain.

Lockyer Valley - West and Lowood both recorded very low proportions of children assessed as at risk, but typical proportions of vulnerable children.

Figure 3-2 Study area comparison: physical health and wellbeing (all children), 2012



Source: Commonwealth of Australia (2013)

3.2 Social competence

The AEDC social competence domain measures children’s confidence and the quality of their interactions with other children and the school environment. Children are assessed as developmentally vulnerable on this indicator where they:

- Have low self-confidence and do not play cooperatively
- Do not demonstrate respect and responsibility
- Do not work independently or follow class routines
- Show little curiosity and willingness to learn.²¹

Across the study area there were 271 children assessed as at risk or vulnerable on the social competence domain in 2012, of which 25 were Aboriginal and Torres Strait Islander (Table 3-2).

²¹ AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

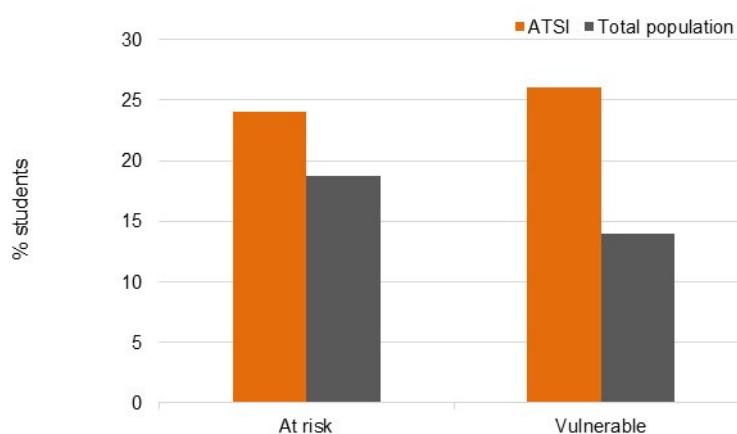
Table 3-2 AEDC assessment: social competence, study area 2012

	At risk or vulnerable	Total assessed
Aboriginal and Torres Strait Islander	25	50
Total children	271	829

Source: Commonwealth of Australia (2013)

Aboriginal and Torres Strait Islander children in the study area were considerably more likely to be assessed as at risk of, or vulnerable to, delayed social competence. Half of Aboriginal and Torres Strait Islander children were assessed as such, in contrast to 32.7 per cent of all children. This effect was more pronounced in the “vulnerable” category (Figure 3-3).

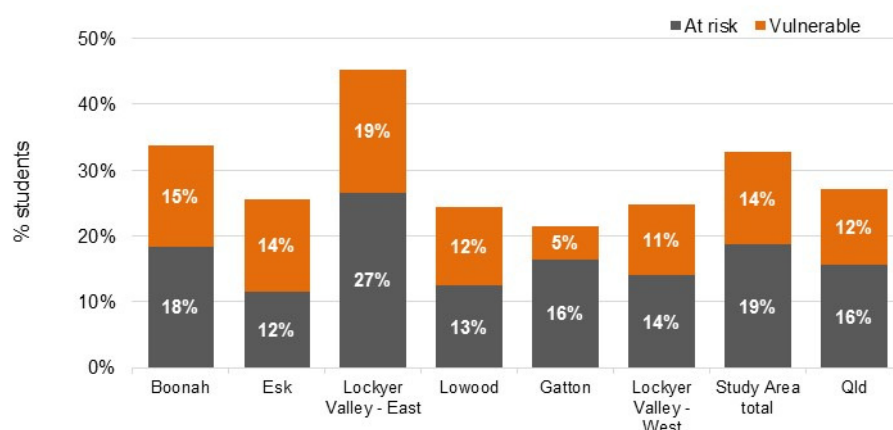
Figure 3-3 ATSI comparison: social competence, 2012



Source: Commonwealth of Australia (2013)

Assessments of risk and vulnerability to social competence development delays were comparatively rare across most study area SA2s. Lockyer Valley - East was an exception with 45.2 per cent of children identified as such (considerably higher than the corresponding Queensland statistics of 27.1 per cent). Over all, the study area recorded slightly elevated levels of risk and vulnerability on this domain. Gatton recorded a very low proportion of children rated as vulnerable.

Figure 3-4 Study area comparison: social competence (all children), 2012



Source: Commonwealth of Australia (2013)

3.3 Emotional maturity

The AEDC emotional maturity domain measures children's ability to concentrate on school work and help others, as well as their patience and temper. Children will be assessed as vulnerable on this domain if they are anti-social, if they are anxious, aggressive or excessively shy, or if they are distractible and unable to concentrate.²²

There were 271 study area children assessed as "at risk" or "vulnerable" on the emotional maturity domain at the 2012 AEDC, of which 25 were Aboriginal and Torres Strait Islander (Table 3-3).

Table 3-3 AEDC assessment: emotional maturity, study area 2012

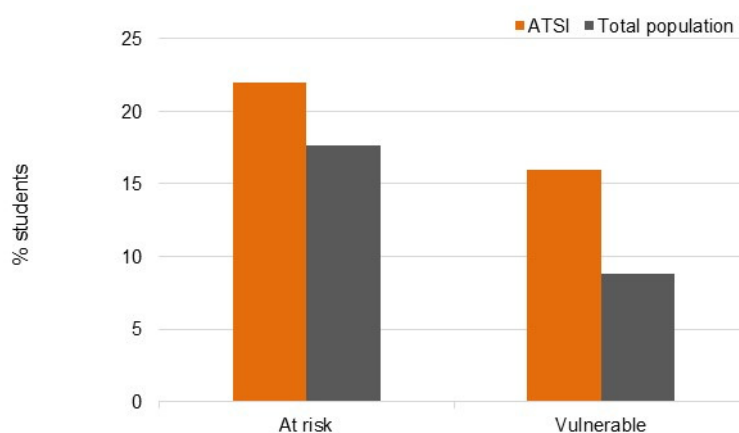
	At risk or vulnerable	Total assessed
Aboriginal and Torres Strait Islander	19	50
Total children	219	829

Source: Commonwealth of Australia (2013)

Aboriginal and Torres Strait Islander children in the study area were considerably more likely to be assessed as at risk of, or vulnerable to, emotional maturity development delays. More than one third of Aboriginal and Torres Strait Islander children were assessed as such, in contrast with slightly over a quarter of all children. This effect was larger in the more severe "vulnerable" category, where Aboriginal and Torres Strait Islander children were almost twice as likely to be identified (Figure 3-5).

²² AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

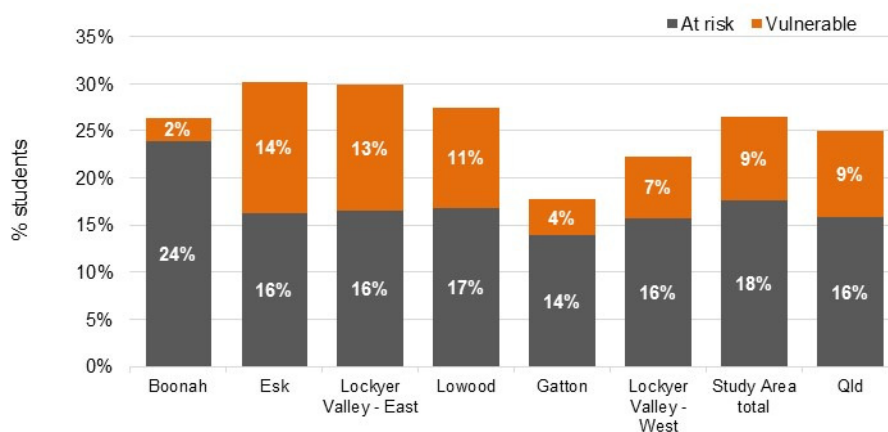
Figure 3-5 ATSI comparison: emotional maturity, 2012



Source: Commonwealth of Australia (2013)

Geographic comparisons of vulnerability to emotional maturity development delays (for all children) show little variation from the Queensland average across the SA2s of the study area. Gatton is substantially underrepresented on this domain (particularly in the more severe “vulnerable” category). Boonah has an extremely small rate of children identified as vulnerable, which is offset a very large proportion of children at risk.

Figure 3-6 Study area comparison: emotional maturity (all children), 2012



Source: Commonwealth of Australia (2013)

3.4 Language and cognitive skills

The language and cognitive skills domain measures children’s abilities in using and interpreting text and numbers (akin to the traditional “three Rs”) and their interest in applying those abilities

at school. Children are assessed as vulnerable on this domain if they do not meet literacy and numeracy standards, and they are unable to recognise basic shapes and concepts.²³

There were 287 children in the study area assessed as “at risk” or “vulnerable” on the language and cognitive skills domain at the 2012 AEDC, of which 25 were Aboriginal and Torres Strait Islander (Table 3-4).

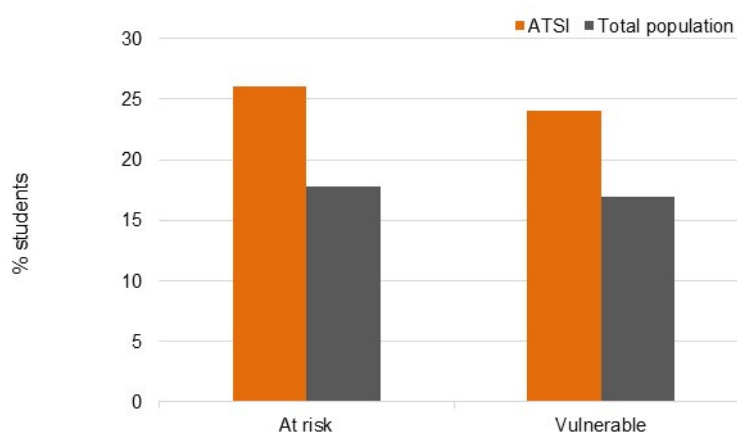
Table 3-4 AEDC assessment: Language and cognitive skills, study area 2012

	At risk or vulnerable	Total assessed
Aboriginal and Torres Strait Islander	25	50
Total children	287	829

Source: Commonwealth of Australia (2013)

Aboriginal and Torres Strait Islander children in the study area were more likely to be assessed as either “at risk of” or “vulnerable to” language and cognitive skills deficits than average (50 per cent in total, compared with 34.6 per cent for the total population) (Figure 3-7).

Figure 3-7 ATSI comparison: language and cognitive skills, 2012



Source: Commonwealth of Australia (2013)

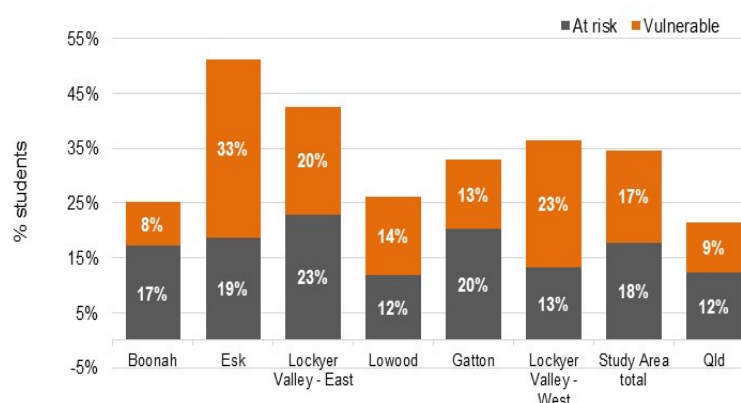
The proportion of study area children assessed as vulnerable on the language and cognitive skills domain (16.9 per cent) was nearly twice the Queensland average. In the “vulnerable” and “at risk” categories combined, the study area was substantially overrepresented at 34.6 per cent (compared to 21.5 per cent for Queensland) (Figure 3-8).

There was significant variation across study area SA2s. While neither Boonah nor Lowood showed significant language and cognitive skills deficits, nearly one third (32.6 per cent) of children in Esk were assessed as being vulnerable to developmental delays and a further 18.6 were assessed as being at risk.

²³ AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

While these scores reflect the agricultural base of the study area economy and the associated low education levels indicated at Section 2, they do not correlate neatly with the remoteness or agricultural productivity of the various study area SA2s.

Figure 3-8 Study area comparison: language and cognitive skills (all children), 2012



Source: Commonwealth of Australia (2013)

3.5 Communication skills and general knowledge

The communication and general knowledge domain measures children's ability to tell a story, communicate with adults and express themselves. Children who have poor communication skills, cannot participate easily in language-based activities, and show little development of general knowledge will be assessed as vulnerable on this domain.²⁴

There were 288 study area children assessed as "at risk" or "vulnerable" on the communication skills and general knowledge domain at the 2012 AEDC, of which 28 were Aboriginal and Torres Strait Islander (Table 3-5).

Table 3-5 AEDC assessment: Communication skills and general knowledge, study area 2012

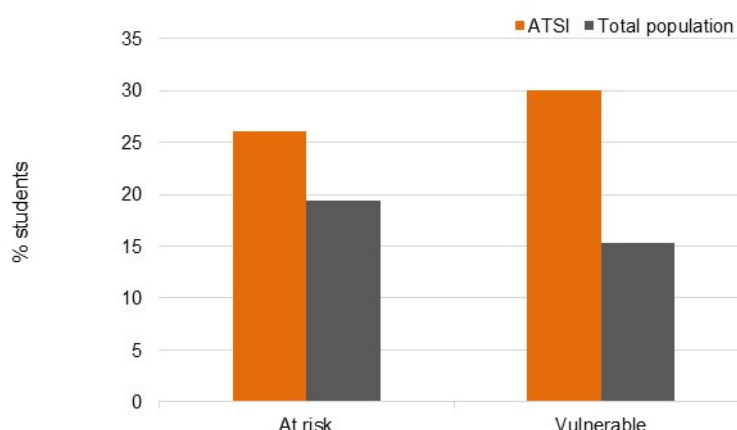
	At risk or vulnerable	Total assessed
Aboriginal and Torres Strait Islander	28	50
Total children	288	829

Source: Commonwealth of Australia (2013)

Over half of all Aboriginal and Torres Strait Islander children were assessed as at risk or vulnerable to deficits in communication skills and general knowledge (Figure 3-9). This is significantly higher than the study area average. The effect is particularly pronounced in the "vulnerable" category.

²⁴ AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

Figure 3-9 ATSI comparison: Communication skills and general knowledge, 2012

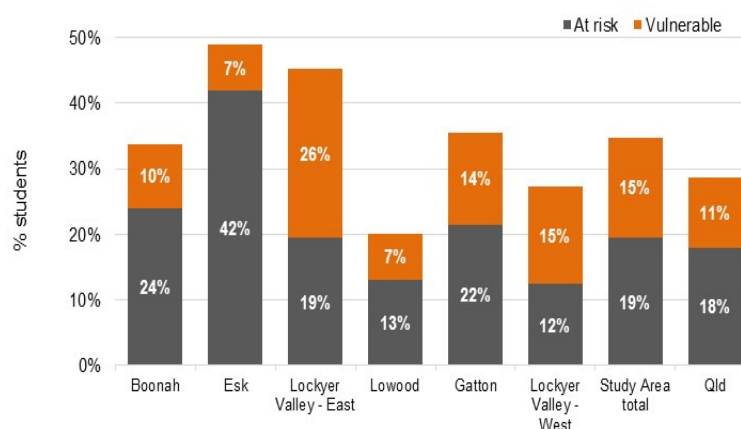


Source: Commonwealth of Australia (2013)

Assessments of “at risk” and “vulnerable” on the communication skills and general knowledge domain were somewhat more prevalent in the study area than the Queensland average (Figure 3-10). This likely has a similar association with the agricultural economic base to that apparent on the language and cognitive skills domain.

Scores on the communication skills and general knowledge domain also showed a similar variability across study area SA2s to the language and cognitive skills domain, with significantly elevated rates of “at risk” and “vulnerable” assessments in Esk and Lockyer Valley - East and lower rates in Lowood.

Figure 3-10 Study area comparison: Communication skills and general knowledge (all children), 2012



Source: Commonwealth of Australia (2013)

3.6 AEDC indicator: Developmentally vulnerable children

Children who are categorised as developmentally vulnerable on any AEDC domain are considered to be at particularly high risk developmentally. The proportion and number of children assessed as such is an important summary indicator of early childhood development in the study area²⁵.

There were 275 children assessed as being developmentally vulnerable on one or more domains in the study area at the 2012 AEDC. Twenty-four of those were Aboriginal and Torres Strait Islander²⁶.

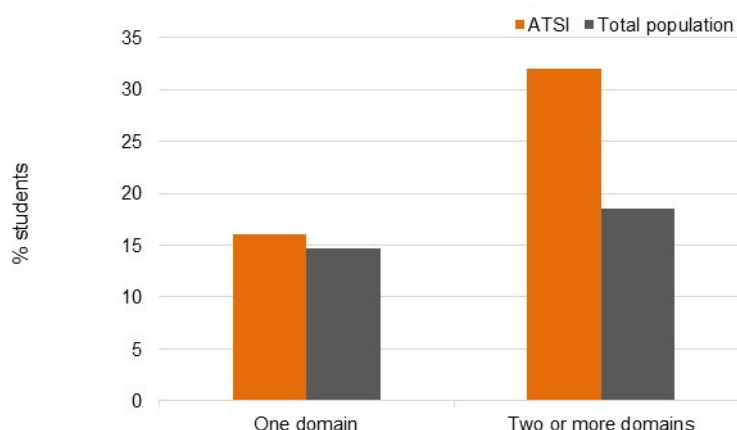
Table 3-6 AEDC assessment: developmentally vulnerable children, study area 2012

	One or more domains	Total assessed
Aboriginal and Torres strait Islander	24	50
Total children	275	829

Source: Commonwealth of Australia (2013)

Nearly half (48 per cent) of all Aboriginal and Torres Strait Islander children in the study area were assessed as developmentally vulnerable on at least one domain at the 2012 AEDC. This compares to around 33.2 for the total student population (Figure 3-11). Aboriginal and Torres Strait Islander children were assessed as developmentally vulnerable on two or more indicators at nearly twice the rate of the total study area population. This indicates a specific cultural complexity to the early childhood challenges facing study area children.

Figure 3-11 ATSI comparison: developmentally vulnerable children, 2012



Source: Commonwealth of Australia (2013)

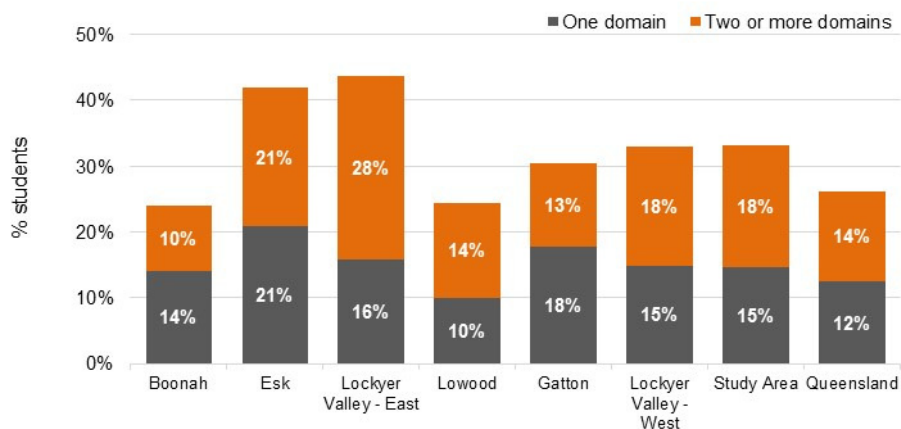
Across study area SA2s, the highest rates of developmental vulnerability (on at least one domain) were recorded in Lockyer Valley - East and Esk (43.7 and 41.9 per cent respectively).

²⁵ AEDC website <http://www.aedc.gov.au/> (accessed 18/06/2015)

²⁶ The apparent (though minor) inconsistency of this figure with other AEDC statistics quoted in this section is technical in nature and due to AEDC statistical procedures (around definitions and eligibility). More information is available at <https://www.aedc.gov.au/researchers/faq-for-researchers>

Lockyer Valley - East also easily recorded the largest proportion of children assessed as being vulnerable on two or more AEDC domains (27.9 per cent) at more than double the Queensland average rate. Boonah and Lowood displayed the lowest overall rates of developmental vulnerability.

Figure 3-12 Regional comparison: developmentally vulnerable children (all children), 2012



Source: Commonwealth of Australia (2013)

4 Conclusion: Implications for Kambu service delivery

Regional and local (spatial) factors

Early development vulnerability is consistently elevated across the study area by comparison with the Queensland average. This indicates high levels of potential demand for Kambu CFC (and other) services proportional to the size of the population.

AEDC figures for the study area in total, however, are strongly skewed by extreme results in the heavily populated Lockyer Valley - East SA2. This suggests that the study area cannot be viewed usefully as a homogenous whole in terms of early childhood development. Further disparities (beyond the sensitivity of this report) are likely to exist between urban centres and their rural surrounds. This sub-regional complexity is compounded by some seemingly counter-intuitive results, such as the generally low rates of developmental risk and vulnerability in Lowood. The contextual factors of low socioeconomic status, low education rates and poor health status (described at Section 2), as well as the unreported impacts of local community services and social infrastructure, are likely to be operating in the Lowood area in ways that are not particularly clear from the scope of this study.

Planning for responsive CFC service delivery throughout the study area on the basis of these statistics would be greatly reinforced by some degree of qualitative validation (such as through community consultation with study area residents and service providers).

In absolute terms (i.e. in terms of the total number of vulnerable families), the bulk of demand for Kambu CFC (and other) services indicated by the AEDC is likely to exist in the heavily populated Lockyer Valley - East area. This concentration is likely to increase as population growth in that area outstrips that of the rest of the study area.

Cultural factors

The AEDC data show a robust pattern of developmental vulnerability amongst Aboriginal and Torres Strait Islander children in the study area. It is highly likely that there are cultural and/or socioeconomic factors impacting specifically on their physical and wellbeing development. Such factors require dedicated, culturally competent CFC service responses.

Due to the small current Aboriginal and Torres Strait Islander population and its dispersion throughout all rural and urban parts of the study area, this demand would be best met with responsive outreach services or dedicated program delivery through existing Kambu facilities. With the rapid growth of the population however, likely due to rapid natural increase (high birth rates), the absolute level of demand for such services is likely to increase.

Traditional non-Aboriginal rural identities and tight-knit community relationships are also likely to be prevalent throughout much of the study area. Any new community support services provided in the study area should be sensitive to these conditions, and contribute to positive perceptions of the community.

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Appendix 1: Introduction to the AEDC

The following background information is adapted from the *Australian Early Development Census Data User Guide, June 2014* (Australian Government, 2014).

Background to the AEDC Data Collection

The Australian Early Development Census (AEDC), formerly the Australia Early Development Index (AEDI), is a population measure of children's development as they enter school. A population measure places the focus on all children in the community and therefore the AEDC reports on early childhood development across the whole community.

The Council of Australian Governments (COAG) has recognised the need for all communities to have information about early childhood development, and has endorsed the Australian Early Development Census as a national progress measure of early childhood development. The AEDC measures five areas [domains] of early childhood development from information collected through a teacher-completed checklist covering:

- physical health and wellbeing (e.g. arrives at school hungry, has well-coordinated movements, is able to manipulate objects)
- social competence (e.g. is able to get along with other children, accepts responsibility for actions)
- emotional maturity (e.g. helps other children in distress, appears unhappy or sad)
- language and cognitive skills (school-based) (e.g. is able to write own name, is able to count to 20)
- communication skills and general knowledge (e.g. is able to communicate one's own needs and understand others).

The Social Research Centre undertook the 2012 data collection and is responsible for managing the AEDC data.

AEDC domain scores

AEDC domain scores are calculated based on teacher responses to 104 developmental questions for each child. The AEDC Microdata files include responses to every AEDC checklist question for each child and a score for each domain. However, domain scores have been developed for use at a group level and have not been psychometrically tested for application in relation to individual children.

Calculation of vulnerability

AEDC results are typically reported as proportions of children who are regarded as 'on track', 'developmentally at risk', and 'developmentally vulnerable' based on [percentile] cut-offs for each domain. Domain cut-offs are created based on the data from all children who participated in the AEDC and take into account the age variations in the population of children in their first year of schooling.

Developmentally vulnerable children can be classified as vulnerable on one or more domains and/or vulnerable on two or more domains below the 10th percentile (developmentally vulnerable). Detailed information on how these classifications are calculated can be found in the AEDC Data Dictionary, available from the AEDC Data Management website.