Thriving, surviving, or declining communities: socio-economic change in Murray-Darling Basin communities

March 2020

Jacki Schirmer[1,2] and Melinda Mylek[1,2]

[1] Health Research Institute, University of Canberra

[2] Centre for Applied Water Science, Institute for Applied Ecology, University of Canberra

GIS mapping produced by Dominic Peel.

This investigation has been commissioned by the Panel for the Independent Assessment of Social and Economic Conditions in the Murray-Darling Basin. The Panel has made this document available for public scrutiny as part of its commitment to transparency. The views in this report do not necessarily represent the views of the Panel. This is part of a series of literature reviews and research investigations that will help inform the Panel's eventual findings and recommendations.

UNIVERSITY OF CANBERRA

Contents

Tables

Figures

Summary

This report examines whether communities in the Murray-Darling Basin (Basin or MDB) have poorer or better than average 'wellbeing' (socio-economic conditions), and identifies some of the factors that are associated with differing socio-economic conditions in different communities. Communities are defined as local government areas (LGAs).

The initial question posed for this report was whether communities were thriving, surviving or declining, and how resilient or vulnerable they were. There is growing agreement that these things should be assessed by examining multiple aspects (dimensions) of the socio-economic conditions of a community, rather than focusing on a single indicator. Drawing on international best practice, community socio-economic conditions were assessed by examining how residents of communities self-assess quality of life in their community (overall community wellbeing); population trends, ageing and health; the economy, employment and standard of living; community and social connection; physical amenity; and access to quality services and infrastructure as self-assessed by residents. A mix of indicators was used, including both objective indicators and subjective indicators Objective indicators measure levels of things such as employment and life-years lost due to avoidable ill-health and accident are measured. Subjective indicators measure resident's self-assessment of quality of access or standard of living/wellbeing. As there are no agreed thresholds for what constitutes 'good' versus 'bad' outcomes on each indicator, communities within and outside the MDB were compared to regional Australian averages to identify which LGAs had poorer than average versus better than average or average socio-economic conditions compared to the average.

Data from the Australian Bureau of Statistics (ABS), Hutchinson Drought Severity Index, Australian Institute of Health and Welfare (AIHW) and Regional Wellbeing Survey (RWS) were analysed to examine social and economic conditions. These data represent the best currently available for local government areas, but do have important limitations: in particular, some data are out of date, with the most recent ABS data produced in 2016 for almost all indicators using ABS sources, AIHW data most recently produced for 2017, and RWS data for 2018. In some communities, conditions in 2019 were quite different to those in 2016, 2017 or 2018, particularly those where drought worsened substantially through 2018 and 2019. Therefore this analysis does not always reflect current conditions in Basin communities, due to a lack of available data. There is a need for annual collection of data in Basin communities to improve analyses of this type.

Social and economic wellbeing of communities is known to vary depending on how 'remote' a community is – meaning whether it is located in a major city (e.g. Canberra), an inner regional area close to many services (e.g. Wagga Wagga), an outer regional area with typically smaller population and greater distance to some services (e.g. Forbes), or a remote or very remote area (e.g. Bourke, Brewarrina). Therefore social and economic conditions in Basin communities were compared to communities outside the Basin for different 'remoteness' categories.

Six dimensions of community wellbeing were examined: overall resident ratings of community wellbeing; population size, ageing and health; economy, employment and standard of living; community and social connection; physical amenity; and access to services and infrastructure.

On average, communities in the Murray-Darling Basin had poorer social and economic conditions than communities outside the Basin for three of these six dimensions – population size, ageing and health; economy, employment and standard of living; and access to services and infrastructure.

However, this varied depending on how remote communities were, and in some cases depending on whether LGAs were located in the Northern Basin or Southern Basin, with overall more positive conditions reported in the Southern Basin for several aspects of community wellbeing. Local government areas (LGAs) located in 'inner regional' areas of the Basin typically had more positive social and economic conditions than those in outer regional and remote areas, and were performing similarly to inner regional communities outside the Basin.

For outer regional and remote communities, meanwhile, there were often large differences between LGAs located within and outside the Basin, with poorer social and economic conditions within the Basin compared to outside it for five of the six dimensions of social and economic wellbeing examined (all except community and social connection). Outer regional and remote communities in particular had poorer access to services and infrastructure, lower rates of population growth, and poorer economic and employment conditions, compared to outer regional and remote communities outside the Basin.

Population growth was lower in MDB communities than in similar communities outside the MDB: the MDB experienced only 2.4% population growth overall during 2006 to 2016, compared to 8.1% growth in regional areas outside the MDB. Similar gaps are apparent for inner regional, outer regional and remote areas. The biggest difference was in remote areas, where MDB populations declined on average by 7.6% compared to 6.0% growth in remote areas outside the MDB. While residents of the MDB were slightly less likely to experience financial distress events than those outside the MDB (unless they lived in remote areas), and had slightly more positive change in labour force participation, on all other economic indicators Basin areas typically had poorer conditions than those outside the Basin. Physical amenity was generally higher in the MDB than outside it for inner regional areas, but not for outer regional and remote areas. Access to services and infrastructure was generally poorer in the MDB compared to outside the MDB, particularly in remote communities. Access to high speed reliable internet and mobile phone reception were the two areas where the MDB performed worst relative to regions outside the MDB. For health services, the MDB performed more poorly than areas outside the MDB in outer regional and remote areas. The only area of community wellbeing in which the MDB typically had better conditions than communities outside the MDB was community and social connection, with residents in most parts of the MDB having more frequent social contact, engagement in community activities, and engagement in volunteering than those in similarly sized communities outside the MDB.

Some characteristics other than the different dimensions of community wellbeing can predict whether a community has poorer or better than average socio-economic conditions. The association between community socio-economic conditions (wellbeing) and an LGA's remoteness, population size, economic diversity, dependent on agriculture in general, dependence on irrigated agriculture, and drought were examined.

In the Basin, the strongest predictors of negative change in community conditions were remoteness, population size, economic diversity, and high dependence on agriculture of any type (whether dryland or irrigation). Low economic diversity, high dependence on agriculture and remoteness more strongly predicted poor social and economic outcomes in the Basin than in LGAs outside the Basin, suggesting a need to focus attention on the impacts that often very high dependence on agricultural employment in outer regional and remote communities has for the social and economic trajectories of these communities. Dependence on irrigated agriculture was not a predictor of more negative outcomes, however this finding may be confounded by the co-location of many irrigation communities with larger population centres, meaning that further, more in-depth analysis that controls for this is needed. Additionally, more specific analysis of differences in wellbeing of

communities that have experienced decline in volumes of irrigation water used for agriculture versus those that have experienced less decline is recommended. Similarly, the effects of drought were confounded by location of drought often occurring near relatively large population centres, requiring more detailed analysis to better identify effects of drought.

Overall, the findings suggest a strong need to focus on addressing the factors driving poorer social and economic wellbeing change in outer regional and remote Basin communities. They also suggest that there are important lessons to be learned about how to better support wellbeing in these communities by examining cases where wellbeing is more positive. While on average there are poorer social and economic conditions in outer regional and remote communities, being located in an outer regional or remote area does not automatically result in low wellbeing – some LGAs do 'buck the trend'. This highlights that there are specific challenges to be addressed to enable higher wellbeing of many outer regional and remote communities, but also many examples of positive outcomes to learn lesson from. A key need is for in-depth work examining what differs between communities with poorer and better wellbeing in areas of different remoteness, to better identify what actions can be implemented to address low wellbeing of many outer regional and remote Basin communities.

1. Introduction

The Murray-Darling Basin is a large region that encompasses hundreds of individual communities, ranging from remote and very remote communities with small numbers of people living in them, to the city of Canberra with more than 400,000 residents. The social and economic wellbeing of these communities has been widely discussed in recent years, both in relation to the potential effects of water reform that has changed volumes of water available for irrigated agriculture, and in relation to the impacts of both short- and long-term changes such as the effects of widespread drought, of increasing production efficiency in agriculture, and of reduced availability of key services in smaller communities. Care is needed when describing and analysing social and economic change in Basin communities, or indeed any rural or regional community: while the picture often presented is one in which there is steady and ongoing decline in population, jobs and services, the reality is that some communities are thriving while others are declining, and that there is no single 'trend' being experienced by the diverse communities across regional Australia, including those located within the Basin (Race et al. 2011). It is therefore important to understand which communities are thriving, surviving and declining and, ideally, to be able to identify the factors that explain differences between communities. This is not simple, with multiple factors influencing the social and economic wellbeing of communities at any given time.

This report examines the social and economic wellbeing of Murray-Darling Basin communities, with a focus on understanding whether different communities have better or poorer wellbeing for different aspects of social and economic wellbeing such as feeling a sense of confidence in a community's future, social connection, jobs and economy, safety and landscape, and access to services and infrastructure. It also explores whether particular factors – such as a community having a small population or being located in a more remote region - consistently predict which communities are doing better and worse in terms of their social and economic wellbeing.

To do this, the idea of community wellbeing is first examined, with a focus on identifying how to turn concepts such as 'thriving', 'surviving' and 'declining' into grounded measurable concepts, and on understanding the limitations of available data to measure community wellbeing. The specific methods and data sources used to examine wellbeing of Basin communities are then described (including data from the Australian Bureau of Statistics, Regional Wellbeing Survey, and Hutchinson Drought Severity Index).

Findings are then presented, focusing on:

- Which communities are thriving, surviving or declining according to the most recent data available?
- How does this differ depending on the aspects of community wellbeing being examined, for example do some communities have strong economic performance but poor social connection, while others have poor services and infrastructure but high levels of safety and social connection?
- What factors were most commonly associated with different aspects of thriving, surviving or declining?

1.1. What is a thriving, surviving, declining, resilient or vulnerable community?

How do we define when a community is thriving, surviving, or declining, or when it is resilient versus being vulnerable to impacts from events such as drought? Answering this question requires considering what constitutes a 'good' or 'healthy' community, and what a community needs to be able to cope well with change and challenging events. Unfortunately, 'no agreement exists about a universal definition of community wellbeing' (Foyez et al. 2011, p. 734), despite growing recognition that in addition to measuring the wellbeing of nations/regions and of individuals, it is critical to examine wellbeing of communities (Lee and Kim 2015).

A thriving community is not simply one which has many healthy or wealthy people living within it. Some communities have many healthy and wealthy residents and are thriving; others have many healthy and wealthy residents and a declining. The difference can be as simple as what those people choose to do when challenges occur – do they use their health and financial prosperity to shift to a new community (contributing to decline in their previous community), or to stay and help the community cope with and adapt to challenges? While having individual residents with high wellbeing may help a community cope, it doesn't necessarily do so – and therefore it is important to identify better ways of thinking about what a thriving community looks like that go beyond this (Lee and Kim 2015, Schirmer et al. 2016).

There is growing consensus internationally that a healthy or high functioning (thriving) community is one in which:

> *… all systems function as they should, and work together to make the community function well … a healthy community is one in which all citizens can be assured of a decent quality of life – economically, physically, environmentally, socially, and politically.* - KU Work Group for Community Health and Development (2014)

This means that a thriving community should have not only economic opportunity, but fair governance, good social connections, a healthy environment and good physical infrastructure and services, something now considered standard in most definitions of community wellbeing (see review by Lee and Kim 2015). Based on this idea, Foyez et al. (2011) argued that:

> *…community wellbeing could be defined as the satisfaction with the local place of residence taking into account the attachment to it, the social and physical environment, and the services and facilities (p. 734)*

In other words, if residents feel their community provides them with the things they need for a good life – from services to a positive social life – that community is more likely to be thriving than one where residents say some things are lacking. Many of these things influence each other: a community where there is high conflict and poor governance is less likely to attract economic investment, so is more likely than others to have low economic opportunities.

Defining what a good community is overall is simpler than attempting to measure the extent to which a community is thriving, surviving or declining. Studies examining the social and economic wellbeing of communities have measured many different aspects of community life as part of trying to measure social and economic wellbeing. The following are commonly recognised as important dimensions of a thriving versus declining community:

- **Overall community 'wellbeing' or quality of life:** This approach to measuring community wellbeing asks residents to rate their community as a place to live, for example rating the

extent to which they consider it a good place to live. This type of subjective measure gives residents the opportunity to decide, having weighed the different aspects of their community, how well their community is going. Subjective measures are increasingly viewed as critical to measuring the wellbeing of communities, as they give residents a voice about their community and reflect the lived experience of those in the community (e.g. Stedman 1999, Cuthill 2003, Cox et al. 2010)

- **Population growth (decline):** Early studies of community wellbeing often used change in total population as a key measure of whether a community was thriving or declining, although limitations of this as a measure of wellbeing are increasingly recognised (Haase 2009). In particular, this measure has limitations as it is possible for a community to experience growth in population that is accompanied by either increase or decrease in quality of life of that population. Some growing communities manage to keep up good service delivery and social connection, while others don't – meaning that population growth on its own doesn't necessarily indicate positive change in community wellbeing. Additionally, when overall population size is growing, there is a problem of bias in estimates of population growth versus decline when examined by population categories (Artz and Orazem 2006). A decline in population can also theoretically be accompanied by either positive or negative social change, however rapid and substantial population decline is typically considered a useful and appropriate measure of community decline. In this report, population change has been included with decline considered an indicator of likely decline in community wellbeing, and population growth a positive indicator only if combined with other positive changes in population ageing and health (see next point).
- **Population ageing and health:** Some argue that trajectories in key demographics, particularly ageing of the community and health of the population, provide better measures of community wellbeing than overall population growth or decline (Ramsey and Beesley 2007). For example, a community that is growing due to an influx of people aged 65 and over is unlikely to have sustainable population growth over time if it does not also have growth in the number of younger people living in the community. Health is also important: a community with high rates of avoidable deaths due to diseases or accidents is one that has lower wellbeing, even if the total population size is growing.
- **Economy, employment and standard of living:** Having a healthy local economy that provides job opportunities and a good standard of living is recognised as an important dimension of community health in almost all indexes and measures seeking to measure the 'performance' of communities. This means it is not only important to examine employment levels but whether that employment is translating into a reasonable standard of living (e.g. Haase 2009, Sirgy et al. 2010, O'Sullivan 2013, Nolan et al. 2017)
- **Amenity (physical environment):** Many studies have found that amenity – how a community looks and feels to live in, including local landscape, buildings and sense of safety - is one of the biggest drivers of decisions about migration (Argent et al. 2011). Given this, as findings that the pleasantness of the community as a place to live is a major influence on how people rate their local community as a place that provides a good life, many studies examining community wellbeing include measures of amenity such as satisfaction with the quality of the physical landscape and buildings and safety of the community (e.g. Chavis et al. 1986, Chipeur and Pretty 1999, Sirgy et al. 2010, Foyez et al. 2011, O'Sullivan 2013)
- **Social/community connection (social amenity):** It is increasingly recognised that positive social connections are a critical component of a healthy, thriving community. Positive social connections means that residents support each other in both good times and bad, providing both emotional and practical support to each other, have positive interactions with limited or no ongoing disagreement or conflict, and engage in activities such as volunteering and local governance. This is also referred to as sense of community or sense of belonging, and has been found important in multiple types of communities (e.g. Cuthill 2003, Sirgy et al.

2010, Foyez et al. 2011), including rural communities and farming communities in Australia (McManus et al. 2012).

- **Services and infrastructure:** Healthy, thriving communities that are resilient to change have good access to key services including health, education, shops, professional services such as accountants and banks, transport, and telecommunications (Sirgy et al. 2010, Burns and Willis 2011, Foyez et al. 2011).

A thriving community should therefore ideally should have good subjective ratings from its residents; positive population trends in terms of population ageing, health, and sometimes population size; an economy that supports employment and a good standard of living; good amenity; positive social connections; and good provision of services and infrastructure. The following descriptions attempt to bring these different elements together to describe what a thriving community looks and feels like compared to one that is surviving and one that is declining. They also identify what resilience and vulnerability might look like in each case:

> *A community is thriving when its residents feel confident about its future, feel confident their community can cope well with future change, and would recommend their community to others as a good place to live. This is indicated by stable or growing employment, stable or growing household prosperity, a population that is ageing at a similar or lower rate to the regional Australian average stable or growing volunteering rates and social participation, a population that is living a healthy life span, and that has a good level of access to key services, specifically telecommunications, health, education and professional and local government services. A thriving community is more resilient when it has a more diverse economy and community members feel confident in the ability of their community to cope with future change. It is more vulnerable when it has high reliance on a single industry or when social participation is not high (or is declining slightly).*
>
> *A community is surviving if its residents are uncertain about its future and its capacity to cope with change, but would recommend it as a good place to live. This is indicated by employment that is changing at a rate similar to the regional Australian average, stable moderate household prosperity, but the surviving community may be ageing at a more rapid rate than average, and volunteering rates and social participation will be at moderate rates and not growing. The population has a moderate but not high level of access to key services, and may be experiencing a higher than average rate of potentially avoidable 'lost life years' due to avoidable deaths. A surviving community is more resilient when it has a more diverse economy and community members feel confident in the ability of their community to cope with future change. It is more vulnerable when it has high reliance on a single industry, household prosperity is lower, and social participation such as volunteering is lower.*
>
> *A community is declining if few residents would recommend it as a good place to live or feel confident about its future, and many want to migrate to other communities. This is indicated by employment that is declining or growing at a rate below the regional Australian average, low and/or declining household prosperity, the population ageing at a more rapid rate than average, and volunteering rates and social participation will be at low rates and may be declining over time. The population has poor access to one or more of telecommunications, health, education and retail shops, and is likely to have a higher than average rate of potentially avoidable 'lost life years' due to avoidable deaths. A declining community is typically not highly resilient, but may be more resilient if it has a more diverse economy and community members feel somewhat confident in the ability of their community to cope with*

future change. It is more vulnerable when it has high reliance on a single industry, household prosperity is lower, and social participation such as volunteering is lower.

Rates of population change are not referred to in the definitions of surviving, thriving and declining communities. However, they are included in the dataset analysed for this report because, as noted earlier, in many cases (but not all) population growth is an indicator of a thriving or surviving community, and population decline an indicator of a surviving or declining community.

These definitions provide a picture of thriving, surviving and declining communities, and how this relates to resilience and vulnerability. However, the boundaries between a thriving, surviving and declining community will not always be clear. A community may be thriving on some measures and declining on others, meaning it is difficult to identify whether they should be considered as overall thriving, surviving or declining. Rather than attempt to define whether specific communities are thriving, surviving or declining overall, this report presents data that measures a number of aspects of community wellbeing.

1.2. Can the social and economic wellbeing of communities be measured?

Lack of available data is the key challenge faced when attempting to monitor how the social and economic wellbeing of communities is changing over time. As detailed in Schirmer et al. (2019), very little data is available that examines social connection, amenity and access to services and infrastructure in a consistent way across different communities. While there are many 'one-off' studies examining a single community, there is a significant lack of regularly collected data. While data tracking demographic change, and to some extent economic change, are more readily available, these are often collected infrequently at small scales that allow analysis of individual communities. The *Census of Population and Housing* is conducted once every five years: this is the only reliable source of data examining change in populations in many communities such as how rapidly the population is ageing. Similarly, it is the most reliable source of data for individual communities for employment, with data collected between Censuses not typically able to be analysed at small scales.

Overall, this means that measurement of social and economic wellbeing of Basin communities can occur, but only with the limited data available for the types of communities being examined. Because of the limited availability of data at different geographic scales, it is not possible to compare many small communities. The next section considers how a community can best be defined to both ensure maximum use of available data while also ensuring a specific enough definition to be meaningful.

1.3. Defining a 'community': geographic communities versus communities of interest

The term 'community' can mean many things, including:

- A place-based community – meaning communities defined as being the people living in a particular geographic location, which can range in definition from being a group of houses along a specific street, to an entire town, local government area, or an entire nation.
- An interest-based community – meaning communities whose membership is defined based on having a shared interest. For example, people who share a common hobby (e.g. horse riding) or occupation (e.g. farming, or a specific type of farming) are interest-based communities.

In this report, we examine communities of place, as the focus is on social and economic conditions in different geographic locations of the Basin. However, this analysis will not identify important variations in the wellbeing of different communities of interest across the Basin. Within any geographic community, some people will be experiencing better and some poorer social and economic conditions, and for some groups, experience of disadvantage or advantage is systemic across large regions. Future work should also compare different communities of interest to better understand which groups of people are experiencing more and less positive social and economic conditions, particularly Indigenous residents, those employed in different occupations, those of different ages, and those of different genders: for all these communities of interest there is evidence of systemic disadvantage or advantage with regard to social and economic conditions.

For purposes of this report, a geographic community was defined as a local government area (LGA). This was done for several reasons. First, in many cases, a local government area represents a relatively small region in which local residents experience some common community conditions: for example, it is common for access to some types of services to be relatively similar across an LGA, and for social interactions to often take place within the LGA such as local community groups. There are limitations to this, however: many LGAs encompass several towns, each of which may be experiencing somewhat differing social and economic conditions. While ideally the scale of analysis would be at the scale of the individual towns and communities within an LGA, this was not realistically possible with available data: most currently available data sets do not have data available for regions smaller than LGAs or, if they do, do not define those regions in the same way local communities would define them. While robust data are available for many larger cities and towns, it is not available for many smaller towns, and as such attempting to analyse trends at smaller scales would have the effect of excluding many communities with smaller populations – whereas these communities are incorporated in LGA-scale analysis, albeit not in the ideal way. Third, many people are familiar with their local government area, making it a useful unit of analysis, whereas there can be disagreement about what does and does not constitute a 'community' below this scale.

While LGAs were the best scale of analysis for this report, due largely to more precise analysis of communities being impossible with available data, the analysis of LGAs has important limitations. In particular, LGAs range substantially in terms of both geographic and population size. Some are so large that they contain multiple communities within them that may have differing experiences of socio-economic change. Thus while providing a useful administrative boundary, an LGA has some limitation when considered a 'community'. Nevertheless, within these limitations, LGAs often do demarcate important boundaries that define differences between some geographic communities.

The analysis presented is therefore based on analysing LGAs, rather than on analysing by population size. This is an important distinction: any analysis based on individuals (population size) would have quite different results, as the large majority of the population lives in inner regional areas, and far fewer in outer regional and remote areas. As such, analysing based on population would largely reflect trends in inner regional Australia and hide trends in outer regional and remote areas. The analysis therefore focuses on understanding whether *communities (defined as individual LGAs)* have had different trajectories, with an LGA considered to be a 'community' irrespective of the total size of its population.

More detailed and specific analysis of communities would require improving availability of data. This in turn requires improving availability of funding to collect data from large samples of people living in the Basin. Currently, other than the Census, the largest samples of data examining social and economic conditions across the Basin are collected in surveys such as the annual Regional Wellbeing

Survey, which are limited in their coverage. For example, the Regional Wellbeing Survey (www.regionalwellbeing.org.au) typically has between 6,000 and 8,000 Basin respondents each year, but this is not a large enough sample to produce data for every LGA within the Basin, and a lack of funding prevents collection of larger sample sizes. Similarly, the Household Income and Labour Dynamics in Australia (HILDA) study, one of the nation's longest running studies examining social and economic conditions (https://melbourneinstitute.unimelb.edu.au/hilda), has a very limited sample within the Basin (smaller than that of the Regional Wellbeing Survey). Overcoming the large gaps in availability of data on social and economic conditions in communities requires commitment to consistent funding of data collection at sufficient scale to enable the types of analysis needed to properly monitor social and economic conditions in different communities.

The next section summarises the data used to examine social and economic conditions in different LGAs within and outside the Basin.

2. Measures and data sources used to analyse social and economic conditions in Basin communities

2.1. Selection of measures and data sources

The data sources used were selected as they were the best available at the LGA scale, and had data that could be compared across all LGAs in Australia, including across the entire Basin. Much of this data comes from the ABS Census of Population and Housing, which was last conducted in 2016. Hence much data is already over three years old and does not necessarily reflect current conditions. For some measures, this is not a significant problem, as they do not change rapidly over time. For others it is a significant problem, as change will have occurred since 2016. Other data were collected more recently (specifically, data from the Regional Wellbeing Survey), but do not have large samples for every LGA in the Basin, meaning that in some cases, findings for several LGAs had to be combined before reporting to ensure a large enough sample.

The indicators themselves were selected based on their relevance to understanding social and economic wellbeing of communities, and on availability of data of sufficient quality. Table 1 summarises the measures used to analyse social and economic conditions. It also summarises key limitations, the year for which data are most recently available, and likelihood of conditions having changed since the most recent data were collected. Most indicators examine conditions at the most recent point in time for which data are available, while some measure rates of change over a defined period of time to better understand trends.

In total, twenty seven indicators of whether a community is thriving, surviving or declining were produced. For each, the 'average' for (i) regional and (ii) major metropolitan Australian LGAs was calculated, shown in Table 1 in the 'average' column. Regional communities are all LGAs located outside the cities of Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra. Metropolitan communities are all LGAs located within these cities, only one of which (Canberra) is located within the Basin. Table 1 shows that in general regional areas typically have poorer performance than metropolitan communities in terms of population size, ageing and health; economy and employment; and services, while they have better performance in terms of community and social connection and services/infrastructures.

2.2. Defining poor, average and good outcomes for different indicators

To understand whether a community is thriving, surviving, or declining, it is necessary to identify thresholds for different measures that indicator poor, average or good outcomes. There is no agreed consensus on 'how much' of a particular attribute a community needs to have to be defined as resilient versus vulnerable, or as thriving versus declining. Given the lack of clear thresholds available in existing work to indicate 'how much is enough' of things like employment, population growth, availability of infrastructure and services, social connection, and amenity, socio-economic conditions in individual communities were compared to the average for either (i) regional Australia or (ii) major metropolitan Australia (depending on where they were located) to identify if they were doing better or poorer than average. This approach has limitations: for example, some might argue that all

regional communities should be doing better for some measures such as telecommunications. However, this approach does enable a more detailed comparison of communities that enables identification of whether some – for example, specific communities in the Basin – are doing better or poorer than other communities with similar characteristics in other locations. This in turn enables an analysis of whether particular factors are associated with communities experiencing better than average or poorer than average outcomes.

For each indicator, the average score was examined and the extent to which different communities differed from the average. This was used to defined thresholds at which for each indicator a community could be said to be (i) declining/struggling, (ii) surviving/coping/staying stable, or (iii) thriving/growing/improving. These are shown in Table 1. For example, for the measure 'this community copes pretty well with challenges', the average regional community score was 4.9 out of a possible range from 1 (almost all people in the community strongly disagree with this statement) to 7 (almost all people in the community strongly agree with the statement. However, there is some variation in this, and the 'typical' range into which a majority of communities fell was a score of 4.8 to 5.1. Given this, a community performing poorer than average was defined as one with a score of less than 4.8, and one performing better than average had a score of 5.2 or higher.

2.3. Six dimensions of social and economic conditions: methods used to assess each dimension

The 27 indicators were then grouped into six categories, each measuring a different aspects of community wellbeing (social and economic conditions). The six categories were:

- Overall community wellbeing
- Population size, ageing and health
- Economy, employment and standard of living
- Community and social connection
- Physical amenity
- Services and infrastructure.

For each of these six categories, a total rating for a community was calculated by assigning each indicator a score of 1 if the community had a poorer than average score, 2 if the community had an average score, and 3 if the community had an above average score, and then calculating the average score of the indicators within the category. This allowed identification of whether, overall, the community was performing poorer than average, average, or better than average, for each of the six dimensions of community wellbeing listed in the dotpoints above.

2.4. Assessing relevance of measures to current conditions in the Basin

While most indicators are likely to be relevant in 2020, some may have changed significantly in some communities since they were last measured (most data were measured in either 2018 or 2016 and as such are either two years or close to four years old). In particular, drought experienced in many Basin communities in recent years may have resulted in change in unemployment rates, financial distress, and labour force participation. There may also be some specific communities where investments have been made in services and infrastructure, or in new industries, since the data analysed for this report were produced, meaning the data are not current for that community. Overall, the majority of indicators are likely to provide some insight into current conditions, despite often being measured between 2 to 4 years prior to production of this report.

Table 1 Measures used to examine social and economic wellbeing of different local government areas

Aspect of community wellbeing	Indicator short name and description	Year meas-ured	Data source & measure	Regional Australia				Major metropolitan Australia				How rapidly will indicator/s change?
				Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	
Overall community wellbeing	'This community copes pretty well when faced with challenges'	2018	2018 Regional Wellbeing Survey, measured 1 (strongly disagree) to 7 (strongly agree)	4.9	<4.8	4.8-5.1	5.2+	4.6	<4.4	4.4-4.7	4.8+	These indicators have been measured in the Regional Wellbeing Survey for several years and do not typically change rapidly, usually changing over several years. The only exceptions are when a sudden 'shock' happens that substantially changes a community, when more rapid change may occur.
	'This community has a bright future'	2018		5.1	<4.9	4.9-5.2	5.3+	5.4	<5.3	5.3-5.5	5.6+	
	'If I could, I would shift to live in another community'	2018		3.2	3.5+	3.0-3.4	<3.0	3.5	<3.4	3.4-3.7	3.8+	
	'I would recommend my community to others as a good place to live'	2018		5.1	<5.0	5.0-5.3	5.4+	5.0	<4.9	4.9-5.1	5.2+	
Population size, ageing and health	Change in total size of population, 2006-2016	Change over 2006 to 2016	Australian Bureau of Statistics *Census of Population and Housing* time series datasets	8.4%	-2.0% or greater decline	-1.9% to 12.9%	13% or more growth	21.2%	<9%	9%-24%	25%+	Population change and change in young and old population typically happens gradually over years, with some exceptions: new industries can trigger rapid population growth, and sudden closures of activities e.g. a mine or events that cause large loss can trigger more rapid change.
	Change in % population aged under 25, 2006-2016	Change over 2006 to 2016		5.4%	<3.6%	3.6%-6.2%	6.3%+	2.5%	<1.4%	1.4% - 3.5%	3.6%+	
	Change in % population aged 65+, 2006-2016	Change over 2006 to 2016		4.0%	5.5%+	2.5%-5.4%	<2.5%	1.8%	3.5%+	0.5%-3.4%	<0.5%	
	Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017	Averag e of 2013, 2014, 2015, 2016	Australian Institute of Health and Welfare *Mortality over regions and*	60.8 years	68+ years	46-67 years	<46 years	34.7	40+ years	29-39 years	<29 years	Change typically occurs over several years, relatively slowly, rather than more rapidly, with sudden change in the space of 1-2 years unlikely.

Aspect of community wellbeing	Indicator short name and description	Year meas-ured	Data source & measure	Regional Australia				Major metropolitan Australia				How rapidly will indicator/s change?
				Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	
		and 2017	*time (MORT) books,* 2013-2017									
Economy, employment and standard of living	Unemployment rate 2016	2016	Australian Bureau of Statistics *Census of Population and Housing* time series	7.7%	<4.6%	4.6%-7.9%	8.0%+	6.7%	<5.3%	5.3%-7.6%	7.7%+	These measures can change rapidly if there is sudden change in available employment or income e.g. a drought, storm or bushfire triggering downturn or loss of income, or opening of a new employer increasing labour force participation and employment; otherwise they typically change less rapidly.
	Labour force participation rate 2016	2016		61.7%	<57%	57%-66%	67%+	65.8%	<62%	62%-68%	69%+	
	Change in unemployment 2006-2016	Change over 2006 to 2016		0.8% (med-ian)	<0%	0%-1.4%	1.5%+	1.5% (med-ian)	<0.8%	0.8%-2.7%	2.8%+	
	Change in labour force participation 2006-2016	Change over 2006 to 2016		-3.2%	<-3.8%	-3.8% to -0.5%	-0.4%+	0.5%	<-1.1%	-1.1%-1.4%	1.5%+	
	'Local businesses in this region are doing pretty well at the moment'	2018	2018 Regional Wellbeing Survey, measured 1 (strongly disagree) to 7 (strongly agree)	3.7	<3.3	3.3-3.8	3.9+	4.1	<4.0	4.0-4.2	4.3+	These measures can change rapidly if there is sudden change in available employment or income e.g. a drought, storm or bushfire triggering downturn or loss of income; otherwise it typically changes slowly over years
	% who experienced one or more financial distress events in last 12 months (e.g. unable to pay bills or afford meals)	2018		46.1%	52%+	41-51%	<41%	44.4%	51%+	37%-50%	<37%	
Community & social connection	Informal social capital (extent of contact with family and friends)	2018	2018 Regional Wellbeing Survey, measured 1 (never or almost never) to 7 (regular activity)	4.4	<4.3	4.3-4.6	4.7+	4.3	<4.2	4.2-4.4	4.5+	Typically remains relatively stable, with change occurring over several years rather than more rapidly. This can change more rapidly if there is a large 'shock' such as an event which disrupts social connections or which triggers
	Engagement in social and community activities	2018		3.6	<3.4	3.4-3.7	3.8+	3.1	<3.0	3.0-3.2	3.3+	
	Frequency of volunteering	2018		3.7	<3.3	3.3-3.9	4.0+	2.9	<2.7	2.7-3.0	3.1+	

Aspect of community wellbeing	Indicator short name and description	Year meas-ured	Data source & measure	Regional Australia				Major metropolitan Australia				How rapidly will indicator/s change?
				Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	Mean score	Poorer than avg (1)	Average (2)	Better than avg (3)	
	Change in % people volunteering, 2006 to 2016	Change over 2006 to 2016	Australian Bureau of Statistics *Census of Population and Housing* time series	0.1%	<-1.0%	-1%-1%	>1%	1.9%	<0.5%	0.5%-2.5%	2.6%+	specific forms of volunteering.
Physical amenity	'This is a safe place to live'	2018	2018 Regional Wellbeing Survey, measured 1 (strongly disagree) to 7 (strongly agree)	4.9	<4.7	4.7-5.1	5.2+	4.9	<4.7	4.7-5.1	5.2+	These measures do not typically change rapidly. Perceptions of safety can decline rapidly if new safety issues emerge such as particular forms of crime increasing.
	'I like the environment and surrounds I live in'	2018		6.0	<5.8	5.8-6.2	6.3+	5.7	<5.6	5.6-5.9	6.0+	
	'There are attractive buildings/ homes in my community'	2018		5.1	<4.9	4.9-5.3	5.4+	5.2	<5.1	5.1-5.4	5.5+	
Services and infrastructure	Access to general health services e.g. GPs, drop-in centres	2018	2018 Regional Wellbeing Survey, measured 1 (very poor) to 7 (very good)	4.7	<4.5	4.5-4.9	5.0+	5.6	<5.5	5.5-5.7	5.8+	Typically access to services and infrastructure changes gradually over years, except when substantial investment occurs in new infrastructure, when a more rapid change may be seen. For example, opening of a new school, investment in a new telecommunications network can cause rapid change in ratings.
	Quality of local schools	2018		5.2	<4.9	4.9-5.4	5.5+	5.4	<5.3	5.3-5.5	5.6+	
	Local government services	2018		4.5	<4.3	4.3-4.7	4.8+	4.8	<4.7	4.7-4.9	5.0+	
	Professional services e.g. accountants, lawyers	2018		4.4	<4.1	4.1-4.7	4.8+	5.0	<4.8	4.8-5.1	5.2+	
	Mobile phone reception	2018		4.7	<4.4	4.5-4.9	5.0+	5.4	<5.3	5.3-5.5	5.6+	
	Access to high speed, reliable internet	2018		4.3	<4.0	4.1-4.5	4.6+	4.9	<4.8	4.8-5.0	5.1+	

2.5. Comparing communities within and outside the Basin: using 'remoteness' categories

The analysis in this report seeks to compare social and economic conditions in different Basin communities. To assist this, it is helpful to group communities based on some common characteristics, something which allows communities that share similarities to be compared to each other, allowing more high-level analysis of which types of communities are faring better and less well across the Basin.

In many past studies, a key difference found to drive differences in social and economic conditions and how they change over time has been the 'remoteness' of a community, meaning whether a community is located in a major city, an 'inner regional' area that despite being located outside a major city has relatively easy access to services and infrastructure, and 'outer regional area' where distances to services are typically further, or a 'remote' or 'very remote' community which has very poor access to services and infrastructure. Most of Australia's population (over two-third) lives in major cities, while about 20% live in inner regional areas (which often contain large regional centres), a bit less than 10% live in outer regional areas, and around 2% live in remote and very remote regions (Baxter et al. 2011). The impacts of changes such as water reform, drought or change in agriculture are often larger in outer regional and remote areas where the local economy is often more dependent on agriculture than is the case in inner region areas or in major cities, meaning it is useful to separate these types of regions when comparing communities.

Multiple social and economic outcomes have been found to be strongly associated with a community's remoteness, with more remote communities often having poorer health outcomes, lower population growth, less diverse and slower economic growth, and poorer access to key services such as telecommunications compared to communities in or close to major cities (see for example McGrail and Humphreys 2015, Dinh et al. 2017, Park 2017). However, not all social and economic conditions vary with remoteness: for example participation in some types of sporting activities is higher in more remote communities, while participation in others is lower (Eime et al. 2015).

Remoteness classifications sometimes cut across LGAs – it is possible for one part of an LGA to be classified as 'inner regional' and another as 'outer regional', for example. For our analysis, which aimed to analyse LGAs as a single unit, the 'average' remoteness was used to classify each LGA. This was done by identifying what remoteness classification the majority of the population of an LGA lived in, an approach that is appropriate given indicators focus on characteristics of the population, rather than on characteristics of the land area. Table 2 summarises which Basin LGAs were classified as being in different remoteness categories using this approach. Table 3 summarises the number of people living in Inner Regional, Outer Regional, and Remote/Very Remote parts of the Basin. However, it is important to note that in some LGAs while most people live in a town that has one classification (e.g. inner regional), there may be large areas of land that have a different classification (e.g. outer regional) with fewer people living on them. Ideally, more detailed analysis would better define LGAs into areas of differing remoteness, but this was not possible for many indicators with the data available.

Appendix 1 identifies, for all Basin LGAs, which LGAs were given different remoteness classifications, and the proportion of their population classified as living in different remoteness categories at the time of the 2016 *Census of Population and Housing.*

Inner Regional areas include LGAs such as Albury, Orange and many parts of the surrounding LGA of Cabonne, Edward River, Federation, most of Wagga Wagga, Campaspe, Moira, Greater Shepparton, much of Toowoomba and the Southern Downs, and Murray Bridge.

Outer Regional LGAs include LGAs such as Broken Hill, Forbes, Griffith, Gwydir, Hay, Leeton, Mildura, Moree Plains, Wentworth, Swan Hill, West Wimmera, Goondiwindi, parts of Maranoa and Western Downs, Berri and Barmera, Loxton Waikerie, Renmark Paringa and much of The Coorong.

Remote and very remote LGAs include Bourke, Brewarrina, much of Carrathool, Balonne, Bulloo, Walgett and parts of Maranoa and Western Downs. As there are relatively few 'very remote' LGAs in the Basin, remote and very remote LGAs were grouped into a single category.

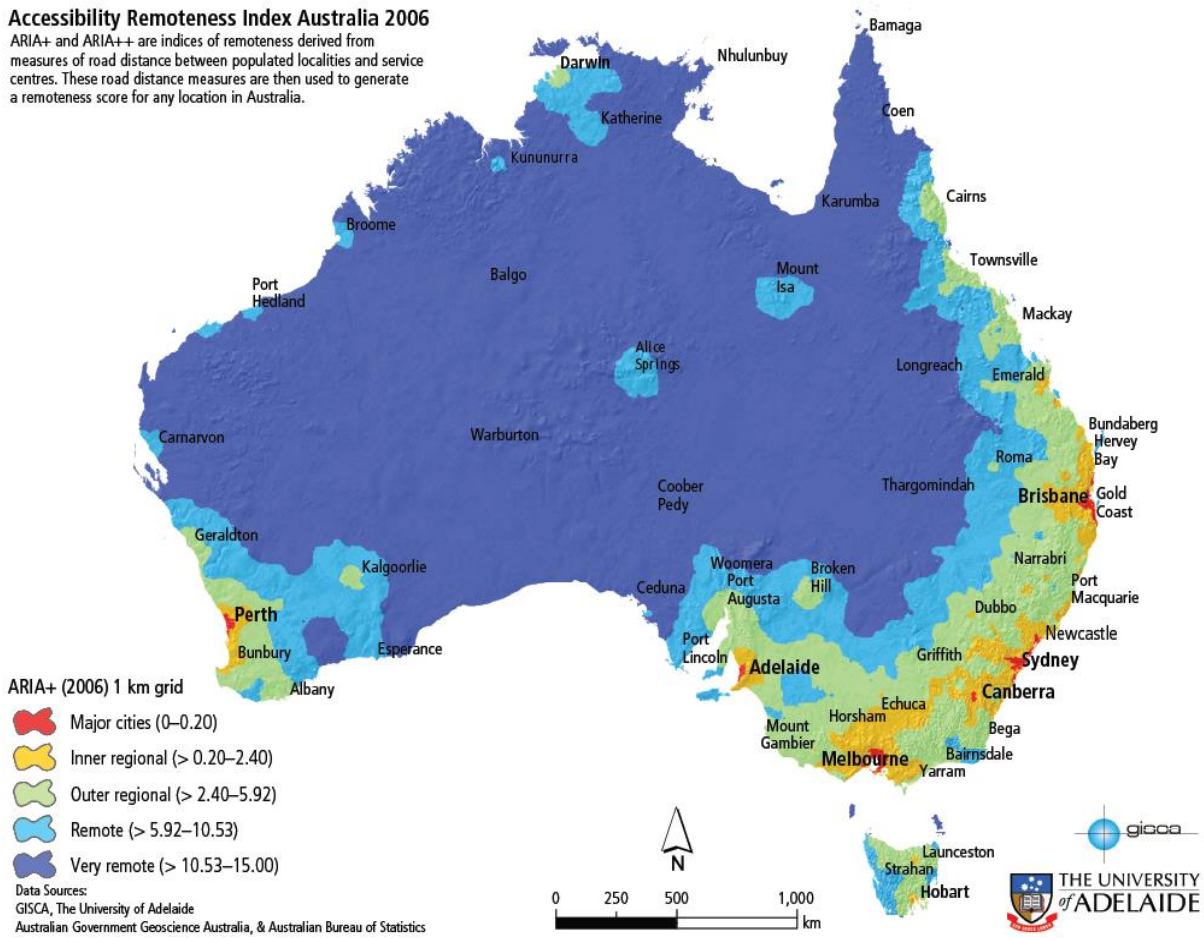

Figure 1 Remoteness regions across Australia (replicated from Baxter et al. 2011)

Table 2 Basin local government areas classified as being Inner Regional, Outer Regional, Remote/Very remote

Region	Inner regional LGAs[1]	Outer regional LGAs[1]	Remote/Very remote LGAs[1]
Northern Basin – Queensland	South Burnett Southern Downs Toowoomba	Goondiwindi Maranoa Western Downs	Balonne Blackall-Tambo Bulloo Murweh Paroo
Northern Basin - NSW	Armidale Regional Dubbo Regional Mid-Western Regional Oberon Tamworth Regional	Gilgandra; Glen Innes Severn; Gunnedah; Gwydir Inverell; Liverpool Plains; Moree Plains; Narrabri; Narromine; Tenterfield; Uralla; Walcha; Warren; Warrumbungle	Bogan Bourke Brewarrina Cobar Coonamble Unincorporated NSW Walgett
Southern Basin – NSW	Albury; Bathurst Regional; Berrigan; Blayney; Cabonne; Coolamon; Cootamundra-Gundagai; Cowra; Edward River; Federation; Greater Hume Shire; Hilltops; Junee; Lithgow; Murray River; Orange; Snowy Valleys; Upper Lachlan; Wagga Wagga; Yass Valley; Goulburn Mulwaree	Balranald; Bland; Broken Hill; Forbes; Griffith; Hay; Lachlan; Leeton; Lockhart; Murrumbidgee; Narrandera; Parkes; Snowy Monaro Regional; Temora; Weddin; Wentworth	Carrathool Central Darling
Southern Basin - Vic	Alpine; Ararat; Ballarat; Benalla; Campaspe; Central Goldfields; Greater Bendigo; Greater Shepparton; Hepburn; Indigo; Macedon Ranges; Mitchell; Moira; Mount Alexander; Murrindindi; Northern Grampians; Pyrenees; Strathbogie; Wangaratta; Wodonga	Buloke; East Gippsland; Gannawarra; Hindmarsh; Horsham; Loddon; Mansfield; Mildura; Swan Hill; Towong; West Wimmera; Yarriambiack	-
Southern Basin – SA	Alexandrina Barossa Mid Murray Mount Barker Murray Bridge Victor Harbor	Berri and Barmera Goyder Karoonda East Murray Loxton Waikerie Peterborough Renmark Paringa The Coorong	Southern Mallee Unincorporated SA
Other	In addition to the LGAs listed above, the following LGAs classified as 'Major cities' are partly or wholly located in the Basin: Australian Capital Territory, Queanbeyan-Palerang, and part of Yarra Ranges.		

[1] Some LGAs are only partly within the Basin, while other parts are located outside the Basin. For example, only a relatively small proportion of the land area of East Gippsland (Victoria, Outer Regional) is located in the Basin.

Table 3 Population living in Basin LGAs located in Inner Regional, Outer Regional, Remote/very remote

Region[1]	**Inner regional LGAs**	**Outer regional LGAs**	**Remote/Very remote LGAs**
Northern Basin – Queensland	228,080	56,736	12,584
Northern Basin - NSW	168,568	115,267	22,702
Southern Basin – NSW	409,035	145,695	4,554
Southern Basin – Vic	640,355	194,289	0 (no areas classified as remote/very remote)
Southern Basin - SA	126,989	43,787	5,552
Total	1,573,027	555,774	45,392

[1] The population figures include the total population of all LGAs partly or wholly within Inner Regional, Outer Regional and Remote/Very remote areas of the Basin. The total population of the LGA is included even if the LGA is located partly within and partly outside the Basin, which results in the total population being slightly higher than the actual number of people living within Basin boundaries. In addition to the population listed above, further population is located in the major city areas of the Australian Capital Territory, Queanbeyan-Palerang, and part of Yarra Ranges.

3. Findings: social and economic conditions in Basin communities

This section presents findings on social and economic conditions in Basin communities. First, an overall comparison of conditions is presented, comparing performance based on how remote communities are. This is followed by more specific examination of different communities within the Basin.

It is important to recognise that the findings presented represent the 'average' score across an entire LGA. Within any LGA, there is often considerable variation in wellbeing: some people will have higher and some lower wellbeing, and it is important to recognise this and address inequalities in wellbeing within communities. However, for this analysis, the purpose was to examine *overall* community conditions, and hence averages are presented. As stated earlier, this is done only for geographic communities, and future work should also compare different communities of interest to better understand which groups of people are experiencing more and less positive social and economic conditions, particularly Indigenous residents, those employed in different occupations, those of different ages, and those of different genders.

3.1. Overall social and economic conditions

Table 4 compares LGAs within and outside the MDBA that are in:

(i) All regional areas (Regional Australia), meaning all areas outside Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra, including regional, rural and remote LGAs
(ii) Located in the Northern and Southern Basin, and outside the Basin
(iii) Inner Regional areas (using the ABS remoteness classification, these are regional areas that while not being in major cities have 'some restrictions to accessibility to a wide range of goods, services and opportunities for social interaction' based on their road distance from different sized population centres)
(iv) Outer regional areas (regions classifieds as having significantly restricted accessibility based on being a greater distance on average from significant population centres)
(v) Remote/very remote areas (very restricted accessibility due to large distances from major population centres).

Overall, more remote communities have poorer scores compared to less remote communities, with scores (from 1 = much poorer than the regional Australian average to 3 = much better) progressively lower the more remote a community is.

There are, however, differences in conditions of Basin communities compared to those outside. In particular, Northern Basin LGAs had poorer conditions compared to Southern Basin LGAs for some aspects of wellbeing, particularly overall community wellbeing, population size ageing and health, and physical amenity. For some of these aspects of wellbeing, Southern Basin LGAs had on average better conditions than comparable LGAs outside the Basin, while Northern Basin LGAs had poorer conditions.

Communities located in outer regional and remote areas in the Basin often have poorer social and economic condition than communities in outer regional and remote areas outside the Basin. This was the case for five out of the six dimensions of community wellbeing examined:

- Overall community wellbeing was typically higher in 'inner regional' areas of the MDB than inner regional areas outside the MDB, while remote regions in the MDB had poorer overall community wellbeing than remote areas in other parts of Australia
- MDB outer regional and remote communities had poorer scores for population size, ageing and health compared to outer regional and remote communities outside the MDB
- Economic performance and standard of living were lower in MDB outer regional and remote communities compared to outer regional and remote communities outside the MDB
- Amenity was higher in the MDB than outside it for inner regional areas, but lower than areas outside the MDB for outer regional areas (but not remote areas)
- Services and infrastructure were poorer in the MDB than communities outside, for outer regional and remote areas, and similar for inner regional areas.

Communities in the Basin had generally better conditions than communities outside the Basin for only one aspects of community wellbeing: community and social connection was higher in the Basin than outside it.

Overall, these findings suggest that while inner regional communities in the Basin have similar social and economic conditions overall to inner regional communities outside the Basin, outer regional and remote parts of the Basin are experiencing poorer social and economic conditions compared to outer regional and remote areas in other parts of Australia. This suggests that many of the larger regional cities and towns of the Basin may be experiencing relatively positive trends, while it is the smaller communities that are more likely to be experiencing poorer than average social and economic conditions.

Table 4 Average (mean) scores for six dimensions of community socio-economic conditions: comparison within and outside MDB

Region		**Overall community wellbeing**	**Population size, ageing and health**	**Economy, employment & standard of living**	**Community and social connection**	**Physical amenity**	**Services and infras-tructure**
Regional Australia		2.02	1.97	2.02	2.00	2.00	2.05
Regional Australia	In MDB	2.15	1.90	1.92	2.18	2.18	1.89
	Northern Basin	1.68	1.80	1.83	2.13	1.78	1.59
	Southern Basin	2.35	1.95	1.94	2.20	2.40	1.99
	Outside MDB	1.97	2.04	2.04	1.90	2.03	2.15
Inner regional Aus	In MDB	2.46	2.02	1.98	2.14	2.47	2.20
	Northern Basin	2.13	2.03	1.94	1.97	2.04	2.10
	Southern Basin	2.52	2.02	1.99	2.17	2.54	2.22
	Outside MDB	2.36	2.05	2.03	1.89	2.38	2.35
Outer regional Aus	In MDB	2.09	1.85	1.90	2.21	2.16	1.71
	Northern Basin	1.79	1.76	1.80	2.26	1.98	1.50
	Southern Basin	2.23	1.88	1.94	2.22	2.25	1.82
	Outside MDB	2.14	2.01	2.05	2.03	2.36	2.12
Remote Aus	In MDB	1.38	1.69	1.79	2.06	1.46	1.39
	Northern Basin	1.21	1.71	1.79	2.04	1.31	1.39
	Southern Basin	1.88	1.63	1.79	2.13	1.92	1.38
	Outside MDB	1.46	2.07	2.00	1.80	1.26	2.03

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

The next sections examine each of the six dimensions of community wellbeing individually, including examining variation across different Basin communities.

3.2. Overall community wellbeing

The findings for overall community wellbeing are mapped for different Basin LGAs in Figure 2, with Appendix 2 providing findings for individual LGAs. When different LGAs are compared, it is clear that there are sometimes large differences between LGAs, even those that have a similar level of remoteness. In inner regional areas, overall community wellbeing was higher than average for the LGAs of Wodonga, Wangaratta, Murrindindi, Mount Alexander, Macedon Ranges, Indigo, Central Goldfields, Campaspe, Ballarat, Alpine and Albury, and poorer than average for the LGAs of Snowy Valleys, Murray Bridge, Greater Shepparton, South Burnett, Cowra and Armidale Regional. Many of those with poorer than average performance have significant parts of their LGA that fall into 'outer regional' areas, meaning some of these results may reflect poorer conditions in less populated parts of these LGAs. In outer regional areas, overall community wellbeing was higher than average for Towong, Leeton, Renmark Paringa, Mansfield, Berri and Barmera, Loxton Waikerie, Narromine, Murrumbidgee, Temora, Gilgandra, Warrumbungle Shire, Wentworth, Balranald, Yarriambiack, West Wimmera, Hindmarsh, Hay, Narrandera, Bland, and Lockhart, and poorer than average for Warren, Broken Hill, Loddon, Western Downs, Gannawarra, Maranoa, Lachlan, Weddin, Forbes, Parkes, Walcha, Tenterfield, Inverell, Uralla, and Glenn Innes Severn in particular, while another eight LGAs were slightly poorer than average (Swan Hill, Snowy Monaro, Buloke, Liverpool Plains, Gunnedah, Moree Plains, Narrabri, and Gwydir). In remote and very remote areas, overall community wellbeing was higher than average for Carrathool only, and poorer than average for almost all others.

Overall community wellbeing was measured based on four individual indicators. Table 5 shows the findings for each of these four indicators. This suggests that the differences between the Basin and communities outside the Basin are principally that:

- Inner regional Basin communities express greater confidence than other communities in their community's ability to cope with challenges, and are more likely to recommend their community to others as a great place to live.
- Outer regional communities are similar in the Basin and outside it with the exception that those in the Basin were less confident their community has a bright future, but also less likely to wish they could shift to live elsewhere.
- Remote communities in the Basin are less confident in their community's overall wellbeing compared to remote communities elsewhere (on all four measures).

Overall, Southern Basin LGAs tended to report somewhat better conditions compared to LGAs outside the Basin, and Northern Basin LGAs poorer conditions.

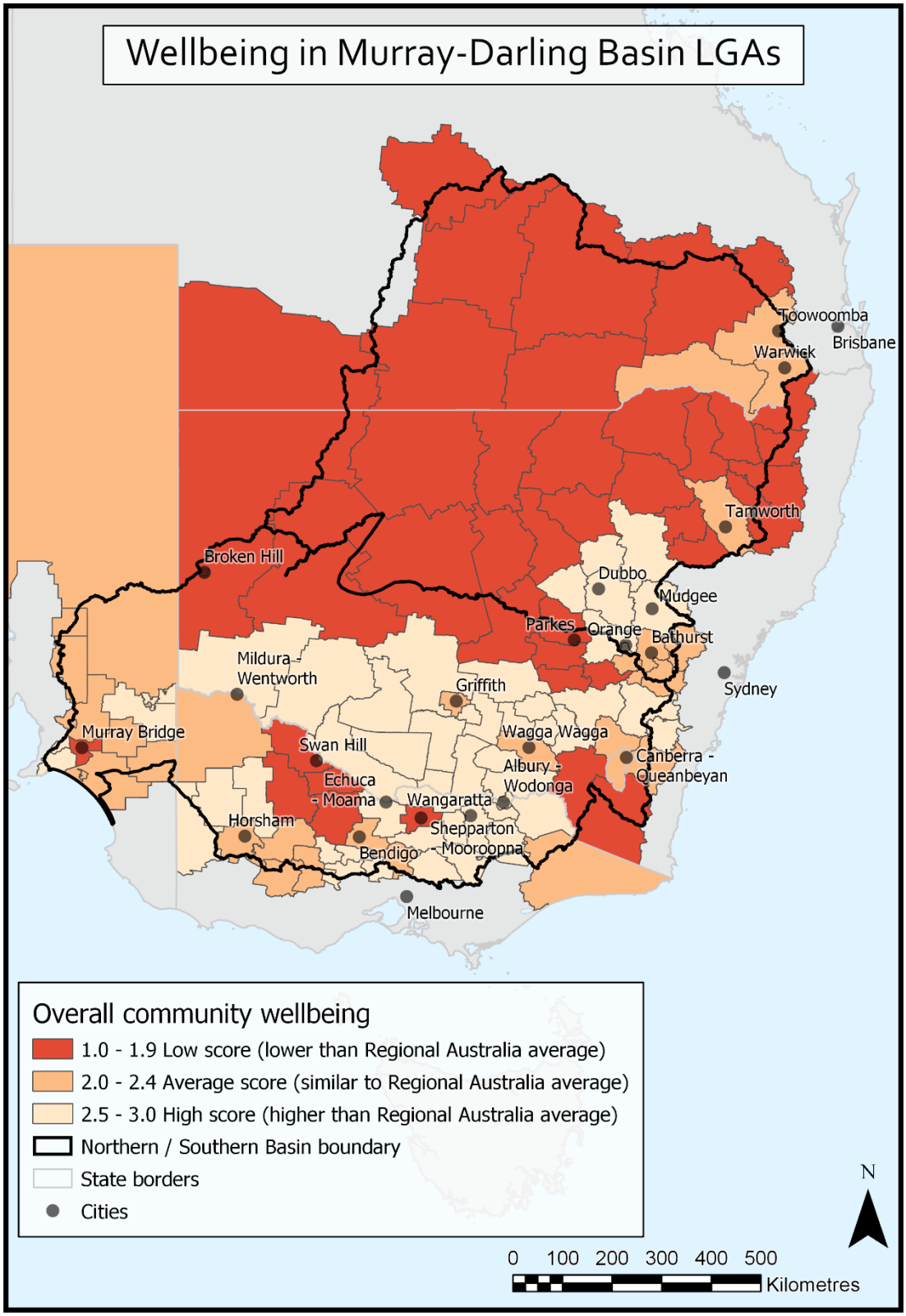

Figure 2 Overall community wellbeing in Murray-Darling Basin LGAs

Table 5 Average (mean) scores for overall community wellbeing and its indicators: comparison within and outside MDB

	Region	Overall community wellbeing	Indicator 1: 'This community copes pretty well when faced with challenges'	Indicator 2: 'This community has a bright future'	Indicator 3: 'If I could, I would shift to live in another community'	Indicator 4: 'I would recommend my community to others as a good place to live'
	Australia	2.02	2.09	2.11	1.94	1.94
Regional Australia	In MDB	2.15	2.22	2.09	2.18	2.11
	Northern Basin	1.68	1.86	1.68	1.59	1.57
	Southern Basin	2.35	2.42	2.25	2.33	2.42
	Outside MDB	1.97	1.98	2.18	1.86	1.85
Inner regional Aus	In MDB	2.46	2.43	2.61	2.28	2.52
	Northern Basin	2.13	2.25	2.38	1.75	2.13
	Southern Basin	2.52	2.46	2.65	2.37	2.59
	Outside MDB	2.36	2.11	2.71	2.27	2.36
Outer regional Aus	In MDB	2.09	2.26	1.75	2.32	2.02
	Northern Basin	1.79	2.00	1.53	1.94	1.71
	Southern Basin	2.23	2.39	1.86	2.50	2.17
	Outside MDB	2.14	2.25	2.20	2.10	2.01
Remote Aus	In MDB	1.38	1.56	1.44	1.19	1.31
	Northern Basin	1.21	1.42	1.42	1.00	1.00
	Southern Basin	1.88	2.00	1.50	1.75	2.25
	Outside MDB	1.67	1.79	1.84	1.55	1.49

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

3.3. Population size, ageing and health

The findings for population size, ageing and health are mapped for different Basin LGAs in Figure 3, with Appendix 2 providing findings for individual LGAs. When different LGAs are compared, it is clear that there are sometimes large differences between LGAs, even those that have a similar level of remoteness. In inner regional areas, population size, ageing and health were more positive than the regional Australia average in only four Basin LGAs: Mount Barker, Greater Bendigo, Bathurst Regional and Toowoomba, and were poorer than average in South Burnett, Yass Valley, Berrigan, Edward River, Central Goldfields, Tamworth Regional, Mid Murray, Northern Grampians, Lithgow, Victor Harbor, Hilltops, Cootamundra-Gundagai, Murray River, Greater Hume and Federation Shire. This again follows a pattern in which those LGAs which, while overall classified as 'inner regional', have substantial parts of their land area located in outer regional areas, often had poorer than average social and economic conditions.

In outer regional areas, no Basin LGAs performed better than the regional Australia average for population size, ageing and health, while several performed poorer than average, particularly Karoonda East Murray, Warrumbungle Shire, Warren, Lachlan, Walcha, Gwydir, The Coorong, Bland, Narrandera, Balranald and Gilgandra. In remote and very remote areas, population size, ageing and health was poorer than average for all Basin LGAs except Carrathool, Murweh, Balonne, Cobar and Brewarrina which had population change trends similar to the regional Australian average.

When the individual measures used to examine conditions related to population size, ageing and health were examined (Table 6), key differences between LGAs within and outside the MDB were:

- The total size of the population grew more slowly in the MDB than outside it, for all types of region
- The proportion of young people in the population grew more slowly in the MDB than outside
- Change in the proportion of people aged 65 and over was similar in the MDB to outside.
- In remote areas of the MDB, health of the population was poorer than for remote areas outside the MDB.

Table 7 provides more detail of the data underlying the comparisons shown in Table 6. Rather than showing the overall score from 1 (below Regional Australia average) to 3 (better than Regional Australia average), as Table 6 does, Table 7 shows the underlying data. The MDB experienced only 2.4% population growth overall during 2006 to 2016, compared to 8.1% growth in regional areas outside the MDB. Similar gaps are apparent for inner regional, outer regional and remote areas. The biggest difference is in remote areas, where MDB populations declined on average by 7.6% compared to 6.0% growth in remote areas outside the MDB. This highlights the often large differences in population growth between communities within and outside the Basin, with Basin communities typically having lower growth or higher decline in population.

The data in Table 7 highlight that the differences in scores shown in Table 6 result from often large differences in population growth and health outcomes. For example, Inner Regional LGAs in the Northern Basin experienced 10.1% population growth on average between 2006 and 2015, while remote/very remote LGAs experienced an average decline in population of 8.2% during the same period. In major cities of the Southern Basin (predominantly the ACT and nearby areas), 34 potential years of life were lost per 1,000 people per year due to treatable or avoidable health conditions – compared to 67 years in remote/very remote areas.

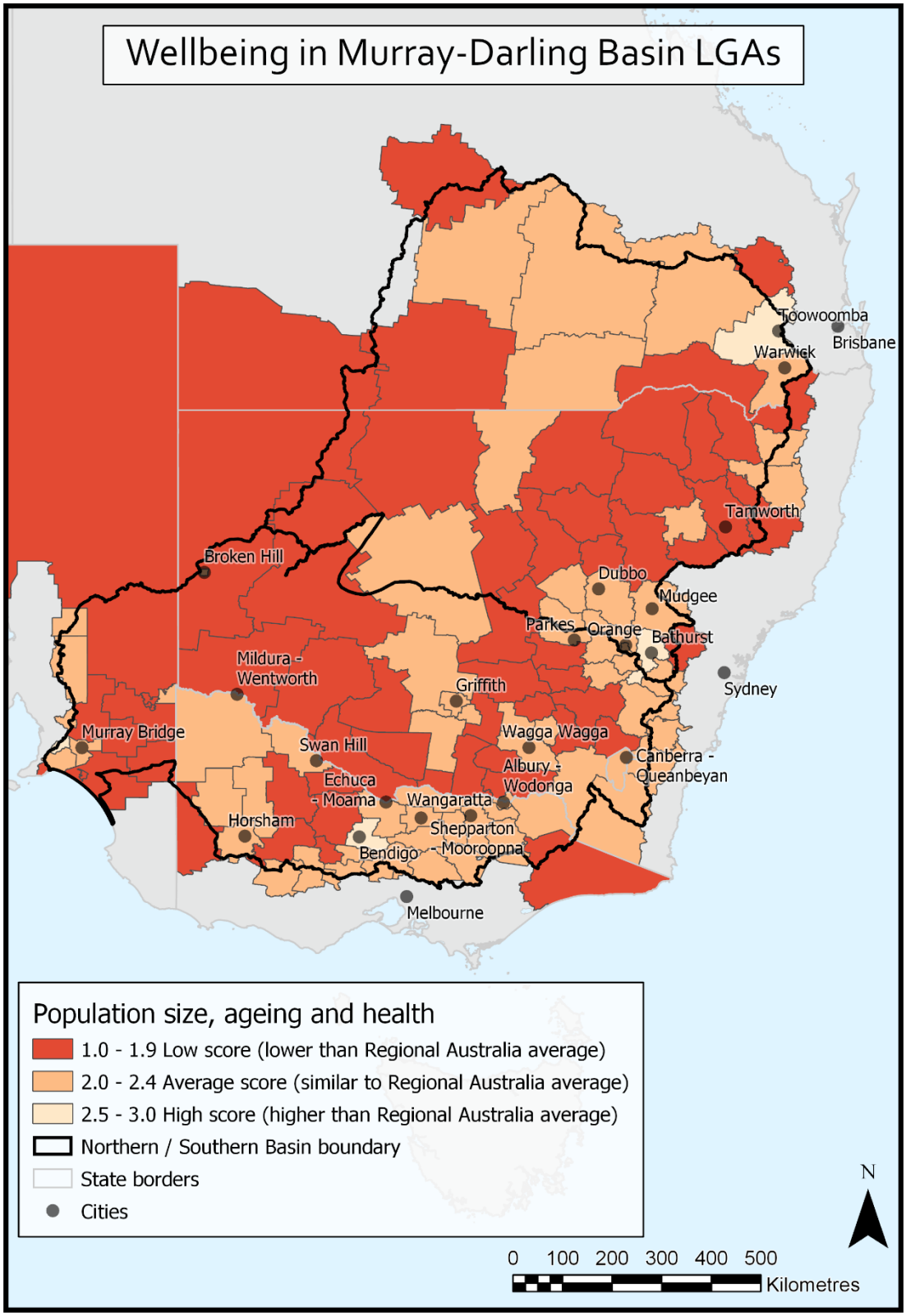

Figure 3 Population size, ageing and health in Murray-Darling Basin LGAs

Table 6 Average (mean) scores for population size, ageing and health and its indicators: comparison within and outside MDB

	Average for LGAs…	Population size, ageing and health	Indicator 1: Change in total size of population, 2006-2016	Indicator 2: Change in % population aged under 25, 2006-2016	Indicator 3: Change in % population aged 65+, 2006-2016	Indicator 4: Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017
Regional Australia		1.97	2.00	2.01	1.88	1.99
Regional Australia	In MDB	1.90	1.79	1.78	1.96	2.07
	Northern Basin	1.80	1.68	1.84	1.95	1.76
	Southern Basin	1.95	1.87	1.86	1.88	2.18
	Outside MDB	1.99	2.06	2.06	1.87	1.98
Inner regional Aus	In MDB	2.02	2.22	1.80	1.83	2.24
	Northern Basin	2.03	2.25	1.75	1.88	2.25
	Southern Basin	2.02	2.22	1.80	1.83	2.24
	Outside MDB	2.09	2.35	1.90	1.90	2.22
Outer regional Aus	In MDB	1.85	1.65	1.70	1.98	2.06
	Northern Basin	1.76	1.82	1.59	1.88	1.76
	Southern Basin	1.88	1.53	1.78	2.03	2.19
	Outside MDB	2.02	2.05	2.17	1.77	2.09
Remote Aus	In MDB	1.69	1.06	2.25	2.00	1.44
	Northern Basin	1.71	1.08	2.25	2.08	1.42
	Southern Basin	1.63	1.00	2.25	1.75	1.50
	Outside MDB	2.07	1.83	2.15	2.27	2.03

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

Table 7 Rates of population change, and potential years of life lost: comparison within and outside MDB

Basin Region	Remoteness	Change in population size (percent), 2006-2016	Change in % population aged under 25, 2006-2016	Change in % population aged 65+, 2006-2016	Potential years of life lost per 1000 people each year due to treatable or avoidable conditions (average 2013-2017)
Northern Basin	Inner Regional	10.1%	3.9%	4.4%	51 years
	Outer Regional	1.5%	3.6%	4.3%	61 years
	Remote/very remote	-8.2%	5.9%	3.8%	78 years
Southern Basin	Major cities	14.6%	4.1%	4.0%	34 years
	Inner Regional	10.1%	4.2%	4.4%	50 years
	Outer Regional	-1.4%	4.3%	3.8%	53 years
	Remote/very remote	-5.0%	6.2%	3.1%	67 years
Outside Basin	Major cities	21.2%	2.3%	1.6%	34 years
	Inner Regional	15.2%	4.4%	4.0%	49 years
	Outer Regional	6.4%	5.4%	4.8%	56 years
	Remote/very remote	6.3%	6.4%	2.9%	77 years

The differences between LGAs of differing remoteness were statistically significant for all four measures, with more remote communities having significantly less population growth, higher growth in the proportion of young people as a proportion of the population and greater incidence of early death due to avoidable or treatable illnesses. Change in the proportion of the population aged over 65 was somewhat different: it grew most in inner and outer regional areas, and generally slightly less in remote regions, with these differences being statistically significant when Kruskal-Wallis H-tests were used to assess the size of differences. The Northern and Southern Basin differed significantly for two of the four measures: population growth was lower in the Northern Basin than the Southern Basin, and years of life lost due to potentially treatable/avoidable illnesses was significantly higher in the Northern Basin compared to the Southern Basin. See Appendix 6 for details of the statistical tests used.

3.4. Economy, employment and standard of living

The findings for economy, employment and standard of living are mapped for different Basin LGAs in Figure 4, with Appendix 2 providing findings for individual LGAs. When different LGAs are compared, there were sometimes large differences between LGAs. In inner regional areas, no Basin LGAs had better than average conditions for economy employment and standard of living, while several had poorer than average conditions, particularly Berrigan, Barossa, South Burnett, Mid Murray, Lithgow, Federation, Cowra, Southern Downs, Armidale Regional, and Benalla.

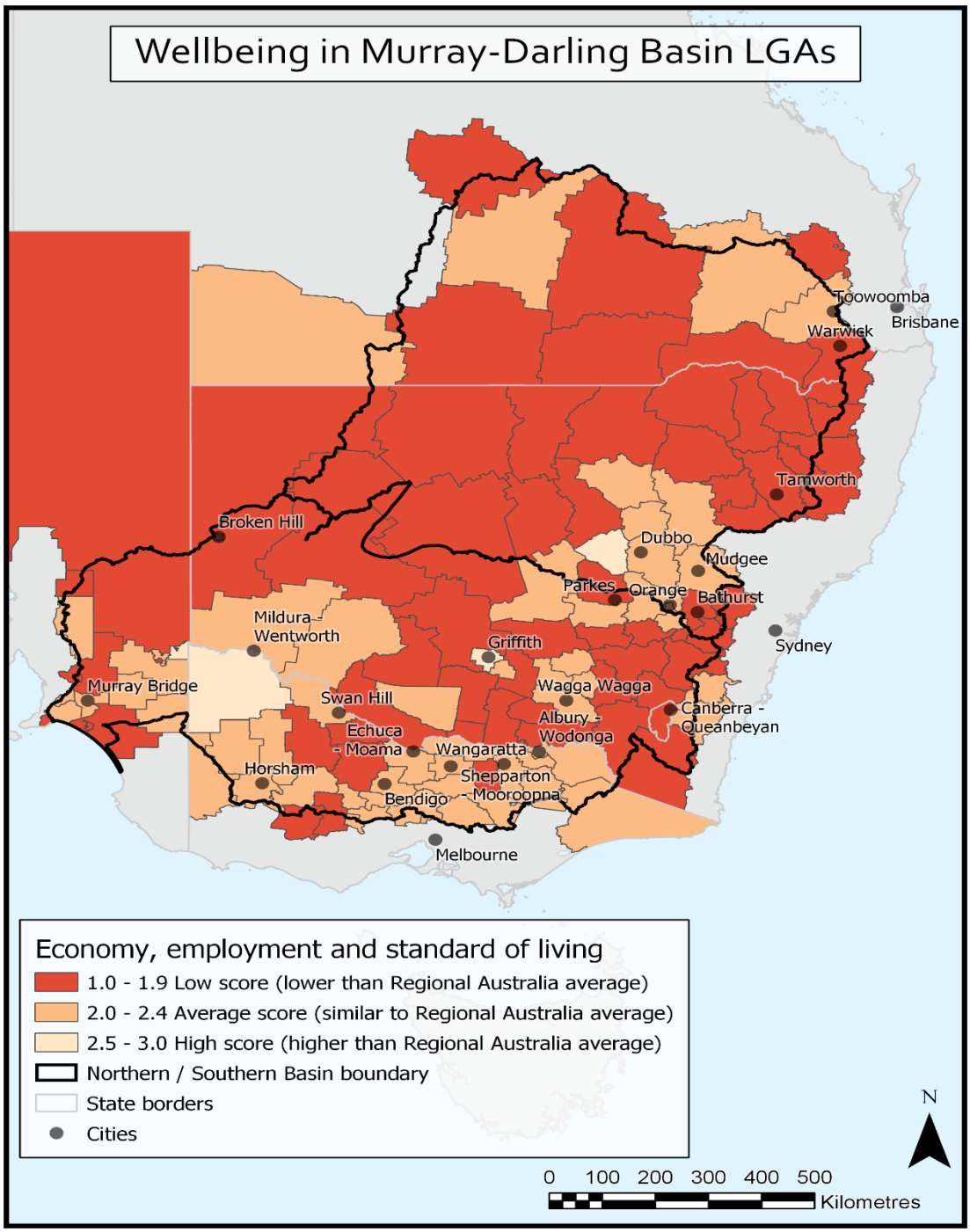

Figure 4 Economy, employment and standard of living in Murray-Darling Basin LGAs

In outer regional areas, economy employment and standard of living was higher than average for Renmark Paringa, Griffith, Narromine and Mildura, and poorer than average for multiple LGAs, with poorest conditions in Lockhart, Bland, Walcha, and Gwydir. In remote and very remote areas, economy employment and standard of living was poorer than average for all but four LGAs, with Southern Mallee, Murweh, Bulloo and Coonamble performing similar to the regional Australian average (however, as these data are drawn largely from 2016, they may not reflect current conditions in these communities, particularly given impacts of drought in some communities since 2016).

Basin areas typically had poorer conditions than those outside the Basin for most of the indicators of economy, employment and standard of living (Table 8). The exceptions were that residents of the MDB were slightly less likely to experience financial distress events than those outside the MDB (unless they lived in remote areas), and had slightly more positive change in labour force participation between 2006 and 2016. Unemployment rates and change in unemployment were slightly poorer in the Basin than outside, as was overall labour force participation. People living in outer regional and remote Basin communities were less confident local businesses were doing well compared to those living in outer regional and remote communities outside the Basin.

Table 8 Average (mean) scores for economy, employment & standard of living and its indicators: comparison within and outside MDB

	Region	Economy, employ-yment & standard of living	Indicator 1: Unem-ployment rate 2016	Indicator 2: Labour force partici-pation rate 2016	Indicator 3: Change in unem-ployment 2006-2016	Indicator 4: Change in labour force participation 2006-2016	Indicator 5: Local businesses in this region are doing pretty well at the moment	Indicator 6: % who experienced one or more financial distress events in last 12 months
Regional Australia		2.02	2.00	2.01	2.08	1.92	2.15	1.95
Regional Australia	In MDB	1.92	1.87	1.87	1.70	2.01	2.08	2.01
	Northern Basin	1.83	1.92	2.03	1.86	2.05	1.70	1.41
	Southern Basin	1.94	1.82	1.84	1.70	1.91	2.19	2.20
	Outside MDB	2.05	2.04	2.05	2.18	1.91	2.19	1.94
Inner regional Aus	In MDB	1.98	1.91	1.74	1.67	1.98	2.43	2.15
	Northern Basin	1.94	2.00	1.75	1.88	2.00	2.38	1.63
	Southern Basin	1.99	1.89	1.74	1.63	1.98	2.43	2.24
	Outside MDB	2.07	2.19	1.87	2.04	2.06	2.36	1.87
Outer regional Aus	In MDB	1.90	1.83	1.89	1.78	1.96	1.92	1.98
	Northern Basin	1.80	1.88	2.00	1.76	2.12	1.71	1.35
	Southern Basin	1.94	1.83	1.81	1.75	1.92	2.03	2.28
	Outside MDB	2.03	1.99	2.01	2.24	1.78	2.25	1.86
Remote Aus	In MDB	1.79	1.88	2.31	2.06	1.94	1.19	1.38
	Northern Basin	1.79	1.92	2.25	2.00	2.00	1.25	1.33
	Southern Basin	1.79	1.75	2.50	2.25	1.75	1.00	1.50
	Outside MDB	2.00	1.87	2.50	2.45	1.97	1.47	1.77

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

3.5. Community and social connection

The findings for community and social connection are mapped for different Basin LGAs in Figure 5, with Appendix 2 providing findings for individual LGAs. When different LGAs are compared, there were fewer differences than for some other measures of community wellbeing, particularly within remoteness classifications.

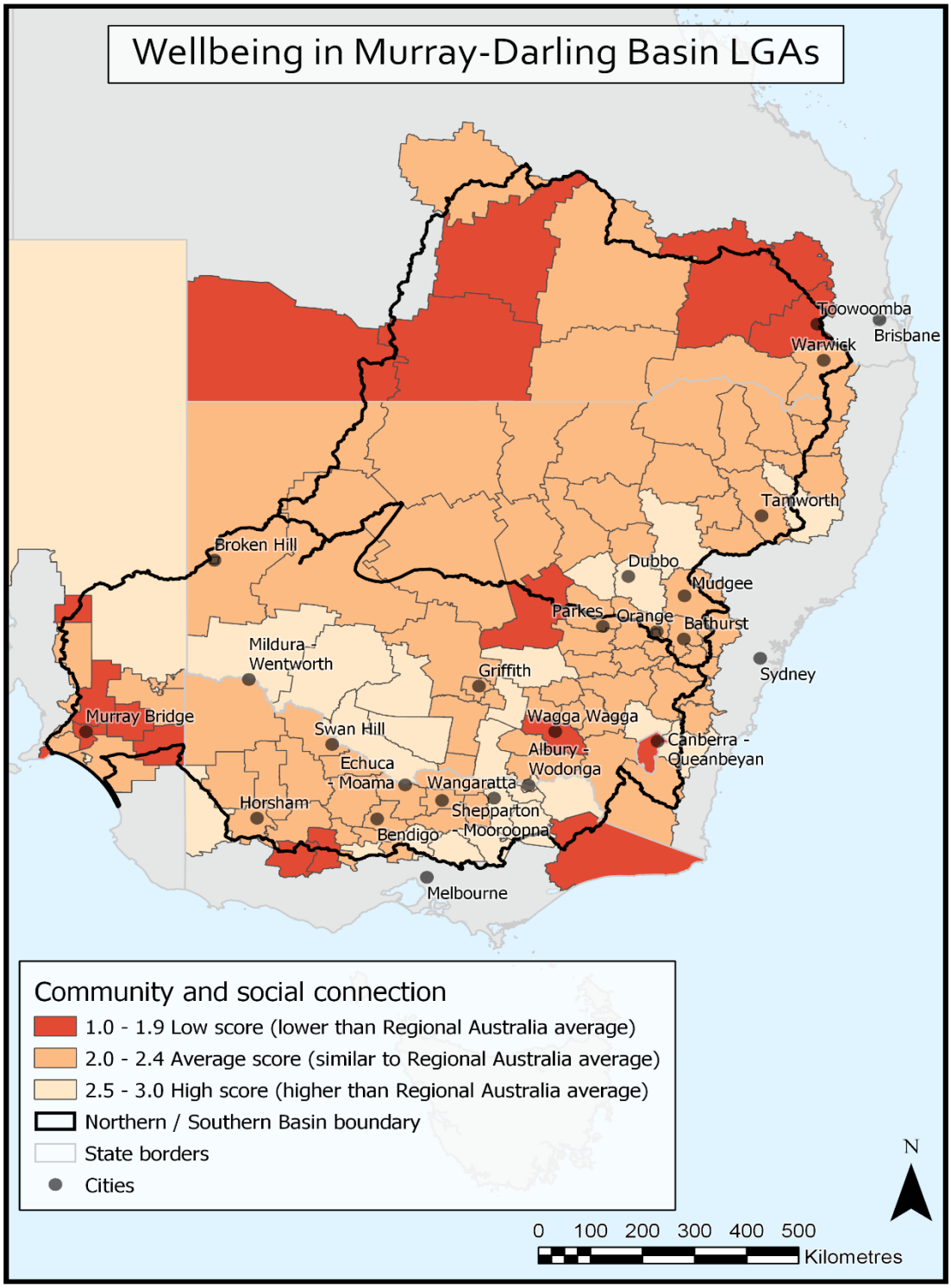

Figure 5 Community and social connection in Murray-Darling Basin LGAs

In inner regional areas, community and social connection were higher than average for the LGAs of Albury, Alpine, Wodonga, Dubbo Regional, Wangaratta, Hepburn, Murrindindi, Edward River, Indigo, Murray River, Mitchell, Yass Valley and Federation, and poorer than average for fewer LGAs, particularly South Burnett, Mid Murray, Victor Harbor, Murray Bridge, Wagga Wagga and Toowoomba. In outer regional areas, community and social connection was higher than average for Wentworth, Balranald, Towong, Mansfield, West Wimmera, Bland, Narromine, Warrumbungle Shire, Hay, Uralla, Narrandera and Walcha, and poorer than average for East Gippsland, Peterborough, Karoonda East Murray, Lachlan and Western Downs. In remote and very remote areas, community and social connection was higher than average for Unincorporated parts of South Australia (much of which are located outside the Basin), and slightly poorer than average for Southern Mallee, Murweh, Bulloo and Paroo.

Community and social connection was generally more positive in Basin communities than outside, for all levels of remoteness, and for all but one indicator (Table 9). Those living in the Basin reported having more frequent contact with friends and family, more engagement in community activities, and greater frequency of volunteering, than those living outside.

Table 9 Average (mean) scores for community and social connection and its indicators: comparison within and outside MDB

	Region	**Community and social connection**	**Indicator 1: Informal social capital (extent of contact with family and friends)**	**Indicator 2: Engagement in social and community activities**	**Indicator 3: Frequency of volunteering**	**Indicator 4: Change in % people volunteering, 2006 to 2016**
	Australia	2.00	1.95	1.98	2.06	2.03
Regional Australia	In MDB	2.18	2.11	2.22	2.42	1.98
	Northern Basin	2.13	2.00	2.16	2.46	1.89
	Southern Basin	2.20	2.18	2.25	2.40	1.96
	Outside MDB	1.94	1.89	1.89	1.94	2.06
Inner regional Aus	In MDB	2.14	2.20	2.15	2.24	1.98
	Northern Basin	1.97	2.00	2.13	2.13	1.63
	Southern Basin	2.17	2.24	2.15	2.26	2.04
	Outside MDB	1.95	2.08	1.83	1.88	2.01
Outer regional Aus	In MDB	2.21	2.06	2.38	2.53	1.96
	Northern Basin	2.26	2.00	2.47	2.53	2.06
	Southern Basin	2.22	2.08	2.33	2.53	1.94
	Outside MDB	1.92	1.77	1.98	2.01	1.99
Remote Aus	In MDB	2.06	2.06	1.88	2.63	1.69
	Northern Basin	2.04	2.00	1.75	2.58	1.83
	Southern Basin	2.13	2.25	2.25	2.75	1.25
	Outside MDB	1.88	1.50	1.88	2.05	1.98

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

3.6. Physical amenity

The findings for physical amenity are mapped for different Basin LGAs in Figure 6, with Appendix 2 providing findings for individual LGAs. When different LGAs were compared, there were sometimes large differences. In inner regional areas, physical amenity was higher than average for more than half of Basin LGAs, and poorer than average for only Murray Bridge, Dubbo Regional, Wagga Wagga, Cowra, Tamworth Regional and Greater Shepparton.

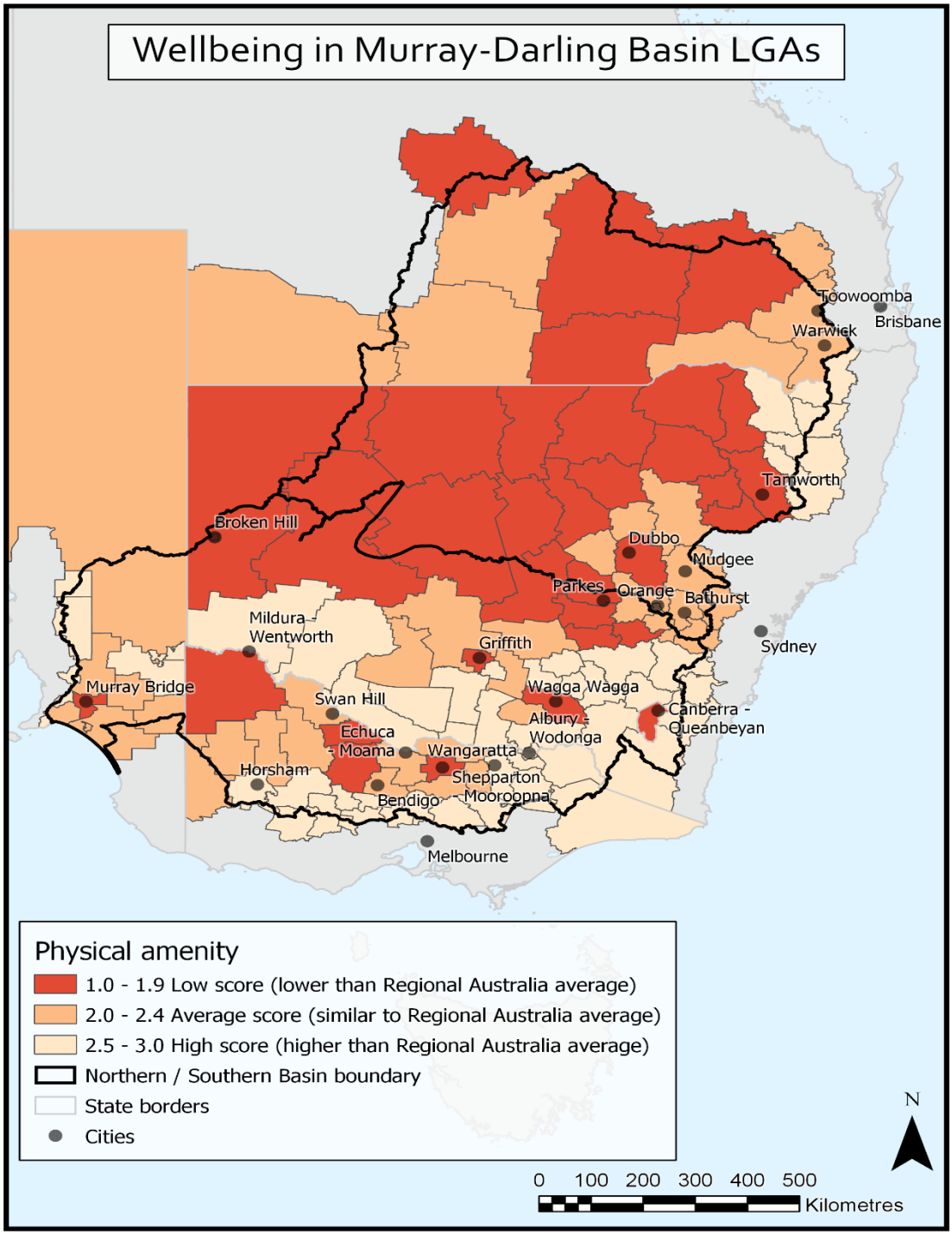

Figure 6 Physical amenity in Murray-Darling Basin LGAs

In outer regional areas, physical amenity was higher than average for Towong, Mansfield, Wentworth, Balranald, Uralla, Walcha, Leeton, Glen Innes Severn, Murrumbidgee, Inverell, Tenterfield, Renmark Paringa, Berri and Barmera, Loxton Waikerie, Goyder, Horsham, Temora, Snowy Monaro Regional, Peterborough and East Gippsland, and poorer than average for Western Downs, Broken Hill, Maranoa, Warren, Loddon, Gannawarra, Lachlan, Gunnedah, Parkes, Forbes, Mildura, Griffith, Gwydir, Weddin, Narrabri, Moree Plains and Liverpool Plains. In remote and very remote areas, physical amenity was poorer than average for more than half of all LGAs (Central Darling, Bogan, Walgett, Unincorporated NSW, Bourke, Coonamble, Brewarrina, Cobar and Blackall-Tambo) and better than average for none.

Physical amenity was generally higher in the MDB than outside it for inner regional areas. Amenity was slightly lower in outer regional/remote areas in the Basin compared to outer regional/remote areas outside the Basin (Table 10).

Table 10 Average (mean) scores for physical amenity and its indicators: comparison within and outside MDB

	Region	Physical amenity	Indicator 1: This is a safe place to live	Indicator 2: I like the environment and surrounds I live in	Indicator 3: There are attractive buildings/ homes in my community
Regional Australia		2.00	2.06	1.82	2.12
Regional Australia	In MDB	2.18	2.25	1.99	2.31
	Northern Basin	1.78	1.51	1.81	2.00
	Southern Basin	2.40	2.59	2.13	2.46
	Outside MDB	1.92	1.98	1.74	2.05
Inner regional Aus	In MDB	2.47	2.50	2.22	2.69
	Northern Basin	2.04	1.75	2.00	2.38
	Southern Basin	2.54	2.63	2.26	2.74
	Outside MDB	2.30	2.38	2.11	2.42
Outer regional Aus	In MDB	2.16	2.26	1.98	2.25
	Northern Basin	1.98	1.53	2.12	2.29
	Southern Basin	2.25	2.61	1.92	2.22
	Outside MDB	2.14	2.29	2.00	2.14
Remote Aus	In MDB	1.46	1.50	1.44	1.44
	Northern Basin	1.31	1.33	1.25	1.33
	Southern Basin	1.92	2.00	2.00	1.75
	Outside MDB	1.64	1.64	1.70	1.57

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations. Each cell in the table shows the average score, with 1 representing much poorer than average and 3 much better than average. Averages for Regional Australia are 2 or close to 2 as the Regional Australian average was taken as the 'average'.

3.7. Access to services and infrastructure

The findings for overall access to services and infrastructure are mapped for different Basin LGAs in Figure 7, with Appendix 2 providing findings for individual LGAs. When different LGAs were compared, there were sometimes large differences.

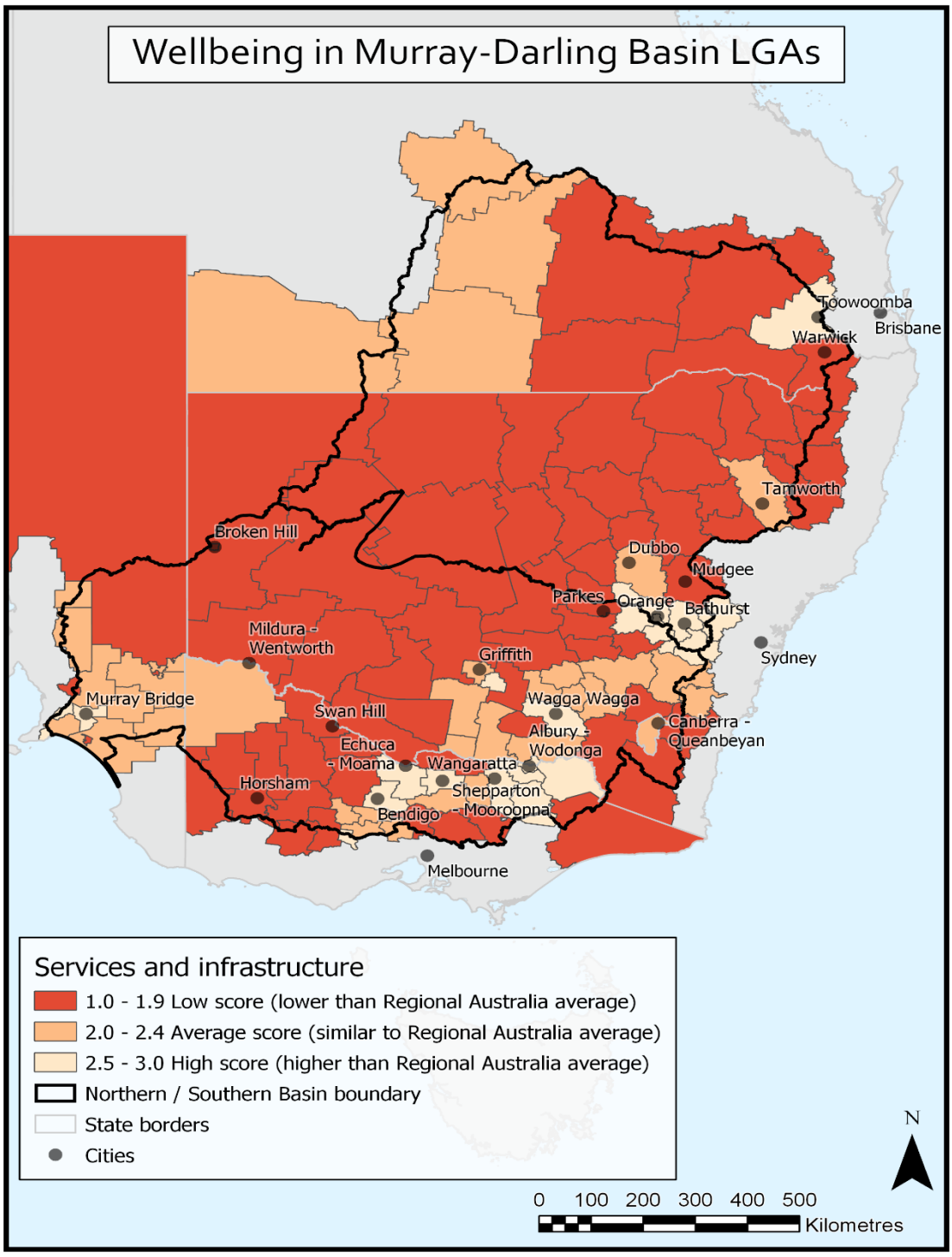

Figure 7 Access to services and infrastructure in Murray-Darling Basin LGAs

In inner regional areas, access to services and infrastructure was higher than average for the LGAs of Ballarat, Greater Bendigo, Orange, Cabonne, Toowoomba, Murray Bridge, Wodonga, Wangaratta, Indigo, Blayney, Bathurst Regional, Oberon, Lithgow and Greater Shepparton, and slightly above average for a further six LGAs (Alpine, Albury, Mount Barker, Victor Habror, Campaspe and Wagga Wagga). Access to services and infrastructure was poorer than average for the inner regional LGAs of Yass Valley, Barossa, Snowy Valleys, Mitchell, Armidale Regional, Pyrenees, Ararat, and Northern Grampians, and slightly poorer than average for Edward River, Murray River, Mid-Western Regional, Moira, Southern Downs, South Burnett and Cowra. In outer regional areas, access to services and infrastructure was higher than average for only Leeton and Towong, average for Temora, Murrumbidgee, Riverland and Murraylands areas of South Australia, Griffith and Mildura, and poorer than average for all others, with most LGAs in the Basin performing poorer than the regional Australia average. In remote and very remote areas, access to services and infrastructure was poorer than average for almost all.

Access to services and infrastructure was generally poorer in the MDB compared to outside the MDB, particularly in outer regional and remote communities (Table 11). The exceptions were local schools and professional services, where access in inner and outer regional areas was generally better within the MDB than outside. Access to high speed reliable internet and mobile phone reception were the two areas where the MDB performed worst relative to regions outside the MDB.

Access to health services was poorer in outer regional/remote areas of the Basin compared to outer regional/remote areas located outside the Basin. See Appendix 3 for detailed data by LGA on access to different types of services and infrastructure.

Table 11 Average (mean) scores for services & infrastructure and its indicators: comparison within and outside MDB

	Region	Services and infras-tructure	Indicator 1: Access to general health services	Indicator 2: Quality of local schools	Indicator 3: Local government services	Indicator 4: Professional services	Indicator 5: Mobile phone reception	Indicator 6: High speed, reliable internet
Regional Australia		2.05	2.01	2.15	2.04	2.00	2.06	2.07
Regional Australia	In MDB	1.89	1.89	2.23	1.86	2.04	1.70	1.62
	Northern Basin	1.59	1.51	2.19	1.38	1.81	1.30	1.38
	Southern Basin	1.99	2.00	2.18	2.03	2.05	1.91	1.79
	Outside MDB	2.12	2.06	2.14	2.11	2.00	2.17	2.21
Inner regional Aus	In MDB	2.20	2.35	2.43	2.02	2.39	2.11	1.91
	Northern Basin	2.10	1.88	2.50	1.88	2.50	1.88	2.00
	Southern Basin	2.22	2.43	2.41	2.04	2.37	2.15	1.89
	Outside MDB	2.16	2.18	2.39	2.03	2.03	2.13	2.20
Outer regional Aus	In MDB	1.71	1.45	2.09	1.89	1.83	1.47	1.55
	Northern Basin	1.50	1.24	2.29	1.35	1.82	1.00	1.29
	Southern Basin	1.82	1.56	2.00	2.14	1.83	1.69	1.67
	Outside MDB	2.16	2.08	2.18	2.28	1.92	2.22	2.26
Remote Aus	In MDB	1.39	1.63	1.69	1.19	1.25	1.31	1.25
	Northern Basin	1.39	1.67	1.83	1.08	1.33	1.33	1.08
	Southern Basin	1.38	1.50	1.25	1.50	1.00	1.25	1.75
	Outside MDB	2.03	1.92	1.95	2.13	1.82	2.21	2.17

The scores in the table indicate the average score, from 1 (much poorer than average) to 3 (much better than average) for each dimension of community wellbeing. The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations.

The Northern and Southern Basin differ significantly in access to overall services and infrastructure, with better access in Southern Basin communities compared to Northern Basin for health services,

local government services, mobile phone and high speed internet (see Appendix 6 for details of statistical analysis conducted). Access to local schools and professionals services was not significantly different between Northern and Southern Basin communities. In the Southern Basin, greater remoteness was associated with poorer access to all types of services, while in the Northern Basin more remote communities reported statistically significantly poorer access to health, education, professional and mobile phone services, but did not have significant differences for internet access or local government services.

3.8. Are other characteristics associated with differing socio-economic conditions?

In any given community, multiple factors influence whether socio-economic conditions are poorer than average, average, or better than average. The six dimensions of community wellbeing often influence each other: for example, a person's subjective rating of the overall wellbeing of their community is likely to be influenced by factors such as availability of services and infrastructure, level of amenity, and availability of jobs in their local community. Access to health services is a key factor influencing health outcomes. This means that all six dimensions of wellbeing should be considered important predictors of overall social and economic conditions.

In addition, some other factors commonly predict differences in socio-economic conditions. Each was examined in addition to the six dimensions of community wellbeing as they are commonly argued in the literature to influence whether a community thrives or declines, and/or its resilience/vulnerability:

- **Remoteness:** The distance of a community from access to services is often considered an important predictor of community outcomes, with communities that are more remote considered more likely to experience decline, and those with better access to services more likely to thrive
- **Population size:** Similarly to remoteness, population size is a predictor of things such as access to services and economic opportunity that can in turn create conditions that support a community to thrive, whereas in communities with smaller population sizes, there can be less opportunity and greater vulnerability to shocks and changes that can trigger decline
- **Economic diversity:** Communities with high reliance on a single industry are often more vulnerable to experiencing decline if that industry experiences negative impacts, or if that industry experiences substantial transformation, such as rapidly growing efficiency that reduces employment required in the industry. Communities with a greater diversity of industries are likely to be more resilient to changes that affect one of those industries.
- **Dependence on agriculture:** Agricultural industries have experienced substantial change in recent decades. In particular, rapidly increasing productivity associated with more efficient production equipment and technology (e.g. improved fertilisers, seeds, watering systems, sowing and harvesting machinery, amongst many other factors) has reduced the employment required per unit of agricultural produce harvested and processed. This means that communities with high dependence on agriculture may have experienced different types of change to those with less dependence on agriculture.
- **Dependence on irrigated agriculture**: A key debate in the Basin is whether irrigation-dependent communities, particularly those where a greater proportion of water has been purchased or transferred to environmental water holders, have experienced poorer than typical socio-economic conditions and change over time. Some studies have suggested this has occurred, while others have found that irrigation dependence is not a significant factor predicting some types of change such as change in farm numbers and numbers of farmers (Wheeler et al. 2019).
- **Drought:** Experience of drought, and more broadly changing climatic risk to increased temperatures and increased drought risk, are often argued to predict socio-economic trajectories in farming areas, and have been found to be a key predictor of change in numbers of farms in the Basin (Wheeler et al. 2019)

Many of these factors vary with remoteness, highlighted in both previous tables in the report, and in Table 12 which highlights that for both the Northern and Southern Basin, there is typically higher dependence on agriculture as remoteness of regions increase, and lower economic diversity.

Table 12 Economic diversity by region and average population size

Basin Region	Remoteness	State	Average % employment in top 3 industries 2016	Average % employment in agriculture, forestry 2016
Northern Basin	**Northern Basin**		**46.1%**	**22.2%**
	Inner Regional	NSW	38.0%	9.6%
		QLD	35.6%	10.6%
	Outer Regional	NSW	46.2%	25.5%
		QLD	41.3%	22.1%
	Remote	NSW	49.4%	21.5%
		QLD	55.0%	35.2%
	Very remote	NSW	62.6%	32.8%
		QLD	52.4%	27.2%
Southern Basin	**Southern Basin**		**42.2%**	**16.3%**
	Inner Regional	NSW	39.0%	13.6%
		SA	37.2%	8.6%
		VIC	37.1%	9.0%
	Outer Regional	NSW	43.7%	21.1%
		SA	48.8%	27.6%
		VIC	46.7%	20.9%
	Remote	NSW	58.5%	46.5%
		SA	64.3%	48.6%
	Very remote	NSW	63.5%	37.9%
		SA	57.4%	24.7%
The analysis was undertaken at the LGA scale, with 114 LGAs in regional parts of the MDB analysed and 240 LGAs in regional areas outside the MDB. Findings would be different if the analysis was based on individuals rather than LGAs, as many LGAs have relatively small populations.				

Other factors are also likely to be important predictors of whether a community currently has poorer or better than average socio-economic conditions. In particular, these include increasing efficiency and economies of scale in many industries (leading to fewer people being needed to manage a given areas of land or produce a given service such as banking), long-term historical opportunities available to local residents in terms of education, housing quality and employment, as well as the history of a community and in particular of relative advantage and disadvantage some or all of its residents have experienced over previous decades and in many cases multiple generations. While these should ideally be included in analyses of this type, a lack of consistently measured data at LGA scale, or in some cases lack of any data, meant it was not possible to include them as part of the analysis. To examine whether any of these factors predicts social outcomes, statistical correlations between each of the factors listed above and the different dimensions of community wellbeing were analysed, using the Spearman's correlation test as data were in some cases non-parametric or ordinal in nature. Table 13 summarises the measures and data sources used for predictive factors, and Table 14 shows findings. Detailed data by LGA are provided in Appendix 4. Correlations were calculated separately for regional LGAs within the MDB and outside the MDB.

Table 13 Potential predictors of socio-economic conditions: description of measures examined

Potential predictor	Data source	Description of measure
Population size of community	ABS Census of Population and Housing	Identifies whether community is part of a population cluster with a total size of 1 million or more (11), 250,000-999,999 (10), 100-249,999 (9), 50-99,999 (8), 20-49,999 (7), 10-19,999 (6), 5000-9999 (5), 1000-4999 (4), 500-999 (3), 200-499 (2) or 199 or fewer people (1).
Remoteness of community (more remote)	ABS Census of Population and Housing	Whether LGA is predominantly part of a major city (1), inner regional (2), outer regional (3), remote (4) or very remote (5) region.

Months of drought experienced 2006 to 2018 (more drought)	Hutchinson Drought Severity Index (HDSI)	Total number of months in which 50% or more of LGA experienced drought between January 2006 and December 2018, using a definition of drought = 6 or more months of below average rainfall. While a limited definition, this still provides a useful measure.
Economic diversity (% jobs dependent on top three industries)	ABS Census of Population and Housing	Proportion of jobs directly reliant on the top three employment industries, using the Industry Division level classification in Census data. This means that a higher number indicates lower economic diversity.
% agricultural businesses who irrigate, 2015-16	ABS Water Use on Australian Farms	Proportion of agricultural businesses in region engaged in irrigated agriculture, providing a measure of reliance on irrigation. Higher numbers indicate higher reliance on irrigation.
% employment dependent on agriculture	ABS Census of Population and Housing	Proportion of employment dependent on agriculture. Higher numbers indicate higher dependence on agriculture.

Table 12 Predicting the socio-economic wellbeing of communities: correlation between potential predictors and socio-economic conditions

	LGA location[1]	Overall community wellbeing	Population size, ageing and health	Economy, employment & standard of living	Community and social connection	Physical amenity	Services and infras-tructure
Population size of community (higher population)	In MDB	0.151	.381**	.313**	0.103	0.12	.438**
	Not in MDB	0.008	-0.119	0.059	-.356**	0.029	.230**
Remoteness of community (more remote)	In MDB	-.582**	-.430**	-.254**	0.065	-.471**	-.687**
	Not in MDB	-.666**	-0.061	-0.029	-.168**	-.648**	-.369**
Months of drought experienced 2006 to 2018 (more drought)	In MDB	.233*	0.167	0.114	-0.006	0.143	0.12
	Not in MDB	.410**	-0.045	0.042	.195**	.443**	.403**
Economic diversity (% jobs dependent on top three industries)	In MDB	-.373**	-.551**	-.288**	0.03	-.327**	-.445**
	Not in MDB	-.137*	-.210**	-0.114	.164*	-.178**	-.201**
% agricultural businesses who irrigate	In MDB	.398**	0.13	.262**	0.148	0.161	.249**
	Not in MDB	-0.012	.190**	0.064	-.407**	.137*	-0.011
% employment dependent on agriculture	In MDB	-.310**	-.585**	-.309**	0.042	-.278**	-.431**
	Not in MDB	0.116	-.322**	-.167**	.343**	0.086	-0.075

* Indicates correlation is significant at the 0.05 level; ** indicates correlation is significant at the 0.01 level

[1] Analysis was conducted for LGAs, rather than based on population size. There are 114 LGAs in regional MDB; 240 in regional areas outside MDB.

Cells have been shaded to provide easier interpretation: yellow means higher/more positive levels of the factor predicted more positive community outcomes, while red means higher or more positive levels predicted more negative outcomes.

The findings suggest that the different potential predictors are all significant predictors of the presence of some types of community conditions:

- Population size: Higher population predicts greater access to services and infrastructure in both the MDB and outside, and more positive economic, population and health outcomes in regions in the MDB. Outside the MDB, higher population size predicts poorer community

and social connection, but this is not the case in the MDB. This suggests that in the MDB, economic and population ageing/health trends are more positive in communities with higher population, and more negative in smaller communities, suggesting that in the Basin there has been less success in maintaining wellbeing of smaller population communities compared to outside the Basin. Smaller population sizes are likely to be associated with poorer community wellbeing in part because population size and remoteness size often go together: there are fewer communities with large populations in remote areas, while major cities by definition have large populations. Once the remoteness of an area is controlled for, smaller population sizes are actually associated with slightly higher overall community wellbeing compared to communities with larger populations- in other words, in an inner regional area, people living in a larger regional city on average had slightly lower wellbeing compared to people living in a smaller town near that regional city.

- Remoteness: More remote communities have poorer community wellbeing, particularly in relation to availability of services and infrastructure, economic opportunity, health outcomes and population growth. Many factors related to geographic distance are likely to be drivers of these poorer outcomes, including poorer access to and quality of key services in more geographically remote areas, and difficulty attracting new economic investment and employment opportunities which in turn triggers outmigration of population, particularly amongst those of working age.
- Drought: The total number of months of drought experienced was a predictor of better community wellbeing, social connection, amenity and services and infrastructure outside the Basin but not within it. This suggests a need to better control for the location of drought (e.g. near major population centres) when analysing its impacts, with this simple correlation likely to reflect existing socio-economic conditions of locations in which drought occurred more than reflecting the impacts of drought on those conditions.
- Economic diversity: Having a high reliance on a small number of industries for a lot of local jobs was associated with poorer community wellbeing. Lower economic diversity predicted poorer overall community wellbeing, population size ageing and health, economy and employment, physical amenity and services and infrastructure, both within and outside the Basin. The association was in all cases stronger in the Basin than outside. Lower economic diversity predicted more positive social connection outside the Basin, but not within it. This is likely to reflect many factors, but in particular less diversity of economic opportunity may be associated with higher rates of young people moving out of the community to seek different types of work. It additionally means that downturns in one of the industries jobs depend on have an overall greater impact on community wellbeing than would happen in a community with a more diverse economy, and recovery takes longer, resulting in challenges in which overall resilience of a community and its wellbeing may decrease over time.
- Higher dependence on irrigation was associated with more positive community wellbeing and economic outcomes in the Basin, as well as more positive access to services and infrastructure. This may reflect the location of many irrigation-dependent communities, which are often (but not always) located closer to large population centres compared to LGAs dependent on irrigated agriculture.
- Dependence on agriculture: Higher dependence on agriculture of any type – whether irrigated or dryland – predicted more negative outcomes on all aspects of community wellbeing except social connection in the Basin, and more negative outcomes for population size, ageing and health and economy and employment outside the Basin. Having a high percentage of jobs in agriculture was a predictor of poorer community wellbeing. While this typically was a factor that also occurred in more remote communities, and was associated with lower economic diversity, high dependence on agriculture was a factor in its own right. This may reflect the very high and often rapid growth of labour productivity in agriculture, which has reduced labour requirements in many communities with high dependence on

agriculture, and been associated with more rapid ageing of communities and less retention of younger people in the community.

4. Conclusions

Are Basin communities thriving, surviving or declining? The answer depends on which Basin community is examined, with communities in inner regional areas generally having more positive trajectories than those in outer regional and remote regions, when compared to areas outside the Basin. In general, outer regional and remote communities in the Basin have poorer social and economic wellbeing compared to outer regional and remote communities located outside the Basin. This suggests a need to focus intervention to support wellbeing in these communities in particular, to ensure it has best effect: inner regional communities in the Basin typically have both better conditions than outer regional and remote areas in the Basin, and comparable or slightly better community wellbeing compared to inner regional areas outside the Basin.

The answer to the question of whether Basin communities are thriving, surviving or declining also depends on which dimensions of community wellbeing are examined. Outer regional and remote Basin communities had poorer outcomes than communities outside the Basin for five of the six aspects of community wellbeing examined. The one exception was community and social connection, where Basin communities generally had better wellbeing compared to communities outside the Basin. Outer regional and remote parts of the Basin typically had poorer amenity, access to services and infrastructure, economic performance (to some extent), and population growth compared to outer regional and remote communities outside the Basin, and compared to inner regional areas anywhere in Australia.

This indicates a need to focus on understanding factors driving more negative change in outer regional and remote MDB communities in particular, and to focus on identifying the complex connections between services and infrastructure and population growth (areas where Basin communities have much poorer than average outcomes), compared to social connection (an area where Basin communities have better than average outcomes).

In the Basin, the strongest predictors of negative change in community conditions were remoteness, population size, economic diversity, and high dependence on agriculture of any type (whether dryland or irrigation). Low economic diversity, high dependence on agriculture and remoteness more strongly predicted poor social and economic outcomes in the Basin than in LGAs outside the Basin. This suggests a need to focus attention on the impacts that high dependence on agricultural employment has for the social and economic trajectories of outer regional and remote Basin communities. Dependence on irrigated agriculture was not a predictor of more negative outcomes, however this finding may be confounded by the co-location of many irrigation communities with larger population centres, meaning that further, more in-depth analysis that controls for this is needed. Similarly, the effects of drought were confounded by location of drought often occurring near relatively large population centres, requiring more detailed analysis to better identify effects of drought.

The strong association between (i) low economic diversity, high dependence on agriculture, and remoteness and (ii) poorer social and economic outcomes in the Basin does not in itself prove that these things cause poorer social and economic outcomes. It is, however, consistent with much other work that suggests that these factors are drivers of reduced community wellbeing. While these conditions were associated with poorer social and economic outcomes both in Basin communities and in communities outside of the Basin, the higher wellbeing of many outer regional and remote

communities outside the Basin, and in the Southern Basin compared to the Northern Basin, suggests there are important lessons to be learned about how to better support wellbeing in these communities. In other words, being located in an outer regional or remote area should not be automatically assumed to result in low wellbeing – instead, it highlights there are specific challenges to be addressed to enable higher wellbeing of these communities. A key need is for in-depth work examining what differs between communities with poorer and better wellbeing in areas of different remoteness, to better identify what actions can be implemented to address low wellbeing of many outer regional and remote Basin communities.

5. References

Argent, N., Tonts, M., Jones, R. and Holmes, J. (2011). Amenity-led migration in rural Australia: a new driver of local demographic and environmental change? In Luck, G.W., Race, D. and Black, R. (eds). *Demographic change in Australia's rural landscapes: implications for society and the environment.* Springer Landscape Series Vol 12. Springer and CSIRO Publishing, Melbourne. pp. 23-44

Artz, G., & Orazem, P. (2006). Reexamining rural decline: How changing rural classifications affect perceived growth. *The Review of Regional Studies*, *36*(2), 163.

Baxter, J., Gray, M. and Hayes, A. (2011). Families in regional, rural and remote Australia. Australian Institute of Family Studies, Canberra. URL: https://aifs.gov.au/sites/default/files/publication-documents/fs201103.pdf

Burns, A. E., & Willis, E. (2011). Empty shops in Australian regional towns as an index of rural wellbeing. *Rural Society*, *21*(1), 21-31.

Chavis, D. M., Hogge, J. H., McMillan, D. W., & Wandersman, A. (1986). Sense of community through Brunswick's lens: A first look. Journal of Community Psychology, 14, 24–40.

Chipuer, H. M., & Pretty, G. M. H. (1999). A review of the sense of community index: Current uses, factor structure, reliability, and further development. Journal of Community Psychology, 27, 643–658.

Cocklin, C., & Dibden, J. (Eds.). (2005). *Sustainability and change in rural Australia*. UNSW Press.

Cox, D., Frere, M., West, S., & Wiseman, J. (2010). Developing and using local community wellbeing indicators: Learning from the experiences of community indicators Victoria. Australian Journal of Social Issues, 45(1), 71–89.

Cuthill, M. (2003). The contribution of human and social capital to building community well-being: A research agenda relating to citizen participation in local governance in Australia. *Urban policy and research*, *21*(4), 373-391.

Dinh, H., Freyens, B., Daly, A., & Vidyattama, Y. (2017). Measuring community economic resilience in Australia: Estimates of recent levels and trends. *Social Indicators Research*, *132*(3), 1217-1236.

Eime, R. M., Charity, M. J., Harvey, J. T., & Payne, W. R. (2015). Participation in sport and physical activity: associations with socio-economic status and geographical remoteness. *BMC public health*, *15*(1), 434.

Forjaz, M. J., Prieto-Flores, M. E., Ayala, A., Rodriguez-Blazquez, C., Fernandez-Mayoralas, G., Rojo-Perez, F., & Martinez-Martin, P. (2011). Measurement properties of the Community Wellbeing Index in older adults. *Quality of Life Research*, *20*(5), 733-743.

Haase, T. (2009). Demography of rural decline and expansion. *A living countryside*, 237-254.

KU Work Group for Community Health and Development (2014). Chapter 2, Section 3: Healthy Cities/Healthy Communities. Lawrence, KS: University of Kansas. Accessed May 12, 2014.

Lee, S. J., & Kim, Y. (2015). Searching for the meaning of community well-being. In *Community well-being and community development* (pp. 9-23). Springer, Cham.

McGrail, M. R., & Humphreys, J. S. (2015). Spatial access disparities to primary health care in rural and remote Australia. *Geospatial Health*.

McManus, P., Walmsley, J., Argent, N., Baum, S., Bourke, L., Martin, J., Pritchard, B. & Sorensen, T. (2012). Rural Community and Rural Resilience: What is important to farmers in keeping their country towns alive? *Journal of Rural Studies*, *28*(1), 20-29.

Nolan, L. B., Waldfogel, J., & Wimer, C. (2017). Long-term trends in rural and urban poverty: New insights using a historical supplemental poverty measure. *The ANNALS of the American Academy of Political and Social Science*, *672*(1), 123-142.

O'Sullivan, E. (2013). *The community well-being index (CWB): Measuring well-being in First Nations and non-aboriginal communities, 1981-2006*. Aboriginal Affairs and Northern Development Canada.

Park, S. (2017). Digital inequalities in rural Australia: A double jeopardy of remoteness and social exclusion. *Journal of Rural Studies*, *54*, 399-407.

Race, D., Luck, G.W., and Black, R. (2011). Patterns, drivers and implications of demographic change in rural landscapes. In Luck, G.W., Race, D. and Black, R. (eds). *Demographic change in Australia's rural landscapes: implications for society and the environment.* Springer Landscape Series Vol 12. Springer and CSIRO Publishing, Melbourne. pp. 1-22

Ramsey, D., & Beesley, K. (2007). Rural community well-being: the perspectives of health care managers in Southwestern Manitoba, Canada. *Journal of Rural and Community Development*, *2*(1).

Schirmer, J., Yabsley, B., Mylek, M. and Peel, D. (2016), Wellbeing, resilience and liveability in regional Australia: the 2015 Regional Wellbeing Survey. University of Canberra, Canberra.

Schirmer, J., Dare, L. and Mylek, M. (2019). Wellbeing, resilience and adaptive capacity- A review of current knowledge of social conditions in the Murray-Darling Basin. Report prepared for the Independent Assessment of Social and Economic Conditions in the Basin. University of Canberra, Canberra. URL: https://www.basin-socio-economic.com.au/51572/documents/123975

Sirgy, M. J., Widgery, R. N., Lee, D. J., & Grace, B. Y. (2010). Developing a measure of community well-being based on perceptions of impact in various life domains. *Social Indicators Research*, *96*(2), 295-311.

Stedman, R. C. (1999). Sense of place as an indicator of community sustainability. *The Forestry Chronicle*, *75*(5), 765-770.

Wheeler, S.A., Xu, Y. & Zuo, A. Modelling the climate, water and socio-economic drivers of farmer exit in the Murray-Darling Basin. *Climatic Change* (2019) doi:10.1007/s10584-019-02601-8

Appendix 1: Classification of Basin local government areas by remoteness

Table A1 identifies which Basin local government areas were classified as being in different remoteness categories. The table also shows the actual population of each LGA in 2016, and how many people were classified by the Australian Bureau of Statistics as living in major cities, inner regional, outer regional, remote and very remote areas.

Table A1 Remoteness classification assigned to local government areas located partly or wholly in the Murray-Darling Basin

STE	Local government area name	Northern or Southern Basin	Remoteness classification used for LGA in analyses	Detailed remoteness classification used in analysis	Number of people living in different remoteness regions within LGA in 2016 (source: ABS Census of Population and Housing)				
					Major Cities	Inner Regional	Outer Regional	Rem-ote	Very Remote
NSW	Albury (C)	Southern	Inner Regional	Inner Regional	0	51080	0	0	0
NSW	Armidale Regional (A)	Northern	Inner Regional	Inner-Outer Regional	0	22843	6610	0	0
NSW	Balranald (A)	Southern	Outer Regional	Outer Reg-Remote	0	0	1981	301	0
NSW	Bathurst Regional (A)	Southern	Inner Regional	Inner-Outer Regional	0	40521	778	0	0
NSW	Berrigan (A)	Southern	Inner Regional	Inner-Outer Regional	0	6482	1980	0	0
NSW	Bland (A)	Southern	Outer Regional	Outer Reg-Remote	0	0	5812	143	0
NSW	Blayney (A)	Southern	Inner Regional	Inner-Outer Regional	0	6264	994	0	0
NSW	Bogan (A)	Northern	Remote	Remote-Very remote	0	0	0	2678	18
NSW	Bourke (A)	Northern	Remote	Remote-Very remote	0	0	0	1821	813
NSW	Brewarrina (A)	Northern	Very remote	Remote-Very remote	0	0	0	7	1643
NSW	Broken Hill (C)	Southern	Outer Regional	Outer Regional	0	0	17709	0	0
NSW	Cabonne (A)	Southern	Inner Regional	Inner-Outer Regional	0	8179	5203	0	0
NSW	Carrathool (A)	Southern	Remote	Outer Reg-Remote	0	0	950	1775	0
NSW	Central Darling (A)	Southern	Very remote	Very remote	0	0	0	0	1831
NSW	Cobar (A)	Northern	Remote	Remote-Very remote	0	0	0	4218	426
NSW	Coolamon (A)	Southern	Inner Regional	Inner-Outer Regional	0	2555	1761	0	0
NSW	Coonamble (A)	Northern	Remote	Outer Reg-Remote	0	0	406	3514	0
NSW	Cowra (A)	Southern	Inner Regional	Inner-Outer Regional	0	9779	2681	0	0
NSW	Edward River (A)	Southern	Inner Regional	Inner-Outer Regional	0	7434	1410	0	0
NSW	Federation (A)	Southern	Inner Regional	Inner-Outer Regional	0	10800	1482	0	0
NSW	Forbes (A)	Southern	Outer Regional	Outer Regional	0	0	9589	0	0
NSW	Gilgandra (A)	Northern	Outer Regional	Outer Regional	0	0	4234	0	0
NSW	Glen Innes Severn (A)	Northern	Outer Regional	Outer Regional	0	0	8832	0	0
NSW	Goulburn Mulwaree (A)	Southern	Inner Regional	Inner-Outer Regional	0	29247	355	0	0
NSW	Greater Hume Shire (A)	Southern	Inner Regional	Inner-Outer Regional	0	9473	879	0	0
NSW	Griffith (C)	Southern	Outer Regional	Outer Regional	0	0	25635	0	0

STE	Local government area name	Northern or Southern Basin	Remoteness classification used for LGA in analyses	Detailed remoteness classification used in analysis	Number of people living in different remoteness regions within LGA in 2016 (source: ABS Census of Population and Housing)				
					Major Cities	Inner Regional	Outer Regional	Rem-ote	Very Remote
NSW	Cootamundra-Gundagai Regional (A)	Southern	Inner Regional	Inner-Outer Regional	0	10180	964	0	0
NSW	Gunnedah (A)	Northern	Outer Regional	Outer Regional	0	0	12214	0	0
NSW	Gwydir (A)	Northern	Outer Regional	Outer Regional	0	0	5255	0	0
NSW	Hay (A)	Southern	Outer Regional	Outer Reg-Remote	0	0	2321	625	0
NSW	Hilltops (A)	Southern	Inner Regional	Inner-Outer Regional	0	15638	2859	0	0
NSW	Inverell (A)	Northern	Outer Regional	Outer Regional	0	0	16485	0	0
NSW	Junee (A)	Southern	Inner Regional	Inner-Outer Regional	0	5559	733	0	0
NSW	Lachlan (A)	Southern	Outer Regional	Outer Reg-Remote	0	0	3179	3014	0
NSW	Leeton (A)	Southern	Outer Regional	Outer Regional	0	0	11167	0	0
NSW	Lithgow (C)	Southern	Inner Regional	Inner-Outer Regional	0	20757	331	0	0
NSW	Liverpool Plains (A)	Northern	Outer Regional	Inner-Outer Regional	0	1439	6251	0	0
NSW	Lockhart (A)	Southern	Outer Regional	Inner-Outer Regional	0	1179	1939	0	0
NSW	Mid-Western Regional (A)	Northern	Inner Regional	Inner-Outer Regional	0	12993	11083	0	0
NSW	Moree Plains (A)	Northern	Outer Regional	Outer Reg-Remote	0	0	11681	1471	0
NSW	Murray River (A)	Southern	Inner Regional	Inner-Outer Regional	0	5845	5741	91	0
NSW	Murrumbidgee (A)	Southern	Outer Regional	Outer Regional	0	0	3838	0	0
NSW	Narrabri (A)	Northern	Outer Regional	Outer Reg-Remote	0	0	12334	753	0
NSW	Narrandera (A)	Southern	Outer Regional	Outer Regional	0	0	5853	0	0
NSW	Narromine (A)	Northern	Outer Regional	Outer Regional	0	0	6444	0	0
NSW	Oberon (A)	Northern	Inner Regional	Inner-Outer Regional	0	4785	512	0	0
NSW	Orange (C)	Southern	Inner Regional	Inner Regional	0	40348	0	0	0
NSW	Parkes (A)	Southern	Outer Regional	Outer Regional	0	0	14611	0	0
NSW	Queanbeyan-Palerang Regional (A)	Southern	Major cities	Major cities-Inner Regional	37343	17711	975	0	0
NSW	Snowy Monaro Regional (A)	Southern	Outer Regional	Inner-Outer Regional	0	9460	10759	0	0
NSW	Snowy Valleys (A)	Southern	Inner Regional	Inner-Outer Regional	0	8722	5683	0	0
NSW	Tamworth Regional (A)	Northern	Inner Regional	Inner-Outer Regional	0	49272	10389	0	0
NSW	Temora (A)	Southern	Outer Regional	Outer Regional	0	0	6110	0	0
NSW	Tenterfield (A)	Northern	Outer Regional	Outer Regional	0	0	6624	0	0
NSW	Upper Lachlan Shire (A)	Southern	Inner Regional	Inner-Outer Regional	0	6676	1020	0	0
NSW	Uralla (A)	Northern	Outer Regional	Inner-Outer Regional	0	2421	3630	0	0
NSW	Wagga Wagga (C)	Southern	Inner Regional	Inner-Outer Regional	0	61353	1037	0	0
NSW	Walcha (A)	Northern	Outer Regional	Outer Regional	0	0	3090	0	0
NSW	Walgett (A)	Northern	Remote	Remote-Very remote	0	0	0	5864	248
NSW	Warren (A)	Northern	Outer Regional	Outer Reg-Remote	0	0	1760	973	0
NSW	Warrumbungle Shire (A)	Northern	Outer Regional	Outer Reg-Remote	0	0	8544	839	0
NSW	Weddin (A)	Southern	Outer Regional	Outer Regional	0	0	3660	0	0
NSW	Wentworth (A)	Southern	Outer Regional	Outer Reg-Remote	0	0	5965	827	0

STE	Local government area name	Northern or Southern Basin	Remoteness classification used for LGA in analyses	Detailed remoteness classification used in analysis	Number of people living in different remoteness regions within LGA in 2016 (source: ABS Census of Population and Housing)				
					Major Cities	Inner Regional	Outer Regional	Rem-ote	Very Remote
NSW	Dubbo Regional (A)	Northern	Inner Regional	Inner-Outer Regional	0	36662	13418	0	0
NSW	Yass Valley (A)	Southern	Inner Regional	Major cities-Inner Regional	555	15584	0	0	0
NSW	Unincorporated NSW	Northern	Very remote	Remote-Very remote	0	0	0	370	685
VIC	Alpine (S)	Southern	Inner Regional	Inner-Outer Regional	0	6956	5376	0	0
VIC	Ararat (RC)	Southern	Inner Regional	Inner-Outer Regional	0	9753	1853	0	0
VIC	Ballarat (C)	Southern	Inner Regional	Inner Regional	0	101689	0	0	0
VIC	Benalla (RC)	Southern	Inner Regional	Inner-Outer Regional	0	13505	358	0	0
VIC	Buloke (S)	Southern	Outer Regional	Outer Regional	0	0	6202	0	0
VIC	Campaspe (S)	Southern	Inner Regional	Inner-Outer Regional	0	36505	556	0	0
VIC	Central Goldfields (S)	Southern	Inner Regional	Inner Regional	0	12993	0	0	0
VIC	East Gippsland (S)	Southern	Outer Regional	Outer Reg-Remote	0	0	43418	1619	0
VIC	Gannawarra (S)	Southern	Outer Regional	Outer Regional	0	0	10548	0	0
VIC	Greater Bendigo (C)	Southern	Inner Regional	Inner Regional	0	110479	0	0	0
VIC	Greater Shepparton (C)	Southern	Inner Regional	Inner Regional	0	63839	0	0	0
VIC	Hepburn (S)	Southern	Inner Regional	Inner Regional	0	15327	0	0	0
VIC	Hindmarsh (S)	Southern	Outer Regional	Outer Reg-Remote	0	0	5057	663	0
VIC	Horsham (RC)	Southern	Outer Regional	Outer Regional	0	0	19641	0	0
VIC	Indigo (S)	Southern	Inner Regional	Inner Regional	0	15953	0	0	0
VIC	Loddon (S)	Southern	Outer Regional	Inner-Outer Regional	0	3118	4403	0	0
VIC	Macedon Ranges (S)	Southern	Inner Regional	Inner Regional	0	46103	0	0	0
VIC	Mansfield (S)	Southern	Outer Regional	Outer Regional	0	0	8589	0	0
VIC	Mildura (RC)	Southern	Outer Regional	Outer Reg-Remote	0	0	53173	702	0
VIC	Mitchell (S)	Southern	Inner Regional	Major cities-Inner Regional	10397	30522	0	0	0
VIC	Moira (S)	Southern	Inner Regional	Inner-Outer Regional	0	28172	933	0	0
VIC	Moorabool (S)	Southern	Major cities	Major cities-Inner Regional	18469	13352	0	0	0
VIC	Mount Alexander (S)	Southern	Inner Regional	Inner Regional	0	18762	0	0	0
VIC	Murrindindi (S)	Southern	Inner Regional	Inner-Outer Regional	0	12696	1033	0	0
VIC	Northern Grampians (S)	Southern	Inner Regional	Inner-Outer Regional	0	7195	4242	0	0
VIC	Pyrenees (S)	Southern	Inner Regional	Inner-Outer Regional	0	6949	291	0	0
VIC	Strathbogie (S)	Southern	Inner Regional	Inner Regional	0	10272	0	0	0
VIC	Swan Hill (RC)	Southern	Outer Regional	Outer Regional	0	0	20587	0	0
VIC	Towong (S)	Southern	Outer Regional	Inner-Outer Regional	0	1233	4750	0	0
VIC	Wangaratta (RC)	Southern	Inner Regional	Inner-Outer Regional	0	27337	975	0	0
VIC	West Wimmera (S)	Southern	Outer Regional	Outer Reg-Remote	0	0	3857	46	0
VIC	Wodonga (C)	Southern	Inner Regional	Inner Regional	0	39347	0	0	0

STE	Local government area name	Northern or Southern Basin	Remoteness classification used for LGA in analyses	Detailed remoteness classification used in analysis	Number of people living in different remoteness regions within LGA in 2016 (source: ABS Census of Population and Housing)				
					Major Cities	Inner Regional	Outer Regional	Rem-ote	Very Remote
VIC	Yarra Ranges (S)	Southern	**Major cities**	**Major cities-Inner Reg**	**118170**	**31371**	**0**	**0**	**0**
VIC	Yarriambiack (S)	Southern	**Outer Regional**	**Outer Reg-Remote**	**0**	**0**	**6651**	**25**	**0**
VIC	Unincorporated Vic	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**876**	**0**	**0**
QLD	Balonne (S)	Northern	**Remote**	**Remote-Very remote**	**0**	**0**	**0**	**3449**	**930**
QLD	Blackall-Tambo (R)	Northern	**Very remote**	**Very remote**	**0**	**0**	**0**	**0**	**1903**
QLD	Bulloo (S)	Northern	**Very remote**	**Very remote**	**0**	**0**	**0**	**0**	**352**
QLD	Goondiwindi (R)	Northern	**Outer Regional**	**Outer Reg-Remote**	**0**	**0**	**10109**	**520**	**0**
QLD	Maranoa (R)	Northern	**Outer Regional**	**Outer Reg-Remote**	**0**	**0**	**7461**	**3837**	**1362**
QLD	Murweh (S)	Northern	**Very remote**	**Very remote**	**0**	**0**	**0**	**0**	**4309**
QLD	Paroo (S)	Northern	**Very remote**	**Very remote**	**0**	**0**	**0**	**0**	**1642**
QLD	South Burnett (R)	Northern	**Inner Regional**	**Inner-Outer Regional**	**0**	**21852**	**10336**	**0**	**0**
QLD	Southern Downs (R)	Northern	**Inner Regional**	**Inner-Outer Regional**	**0**	**22479**	**12631**	**0**	**0**
QLD	Toowoomba (R)	Northern	**Inner Regional**	**Inner-Outer Regional**	**0**	**158357**	**2419**	**0**	**0**
QLD	Western Downs (R)	Northern	**Outer Regional**	**Inner-Outer Regional**	**0**	**13639**	**17725**	**2082**	**0**
SA	Adelaide Hills (DC)	Southern	**Major cities**	**Major cities-Inner Reg**	**21681**	**17184**	**0**	**0**	**0**
SA	Alexandrina (DC)	Southern	**Inner Regional**	**Inner Regional**	**0**	**25871**	**0**	**0**	**0**
SA	Barossa (DC)	Southern	**Inner Regional**	**Major cities-Inner Regional**	**548**	**23014**	**0**	**0**	**0**
SA	Berri and Barmera (DC)	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**10545**	**0**	**0**
SA	Goyder (DC)	Southern	**Outer Regional**	**Inner-Outer Regional**	**0**	**1037**	**3092**	**0**	**0**
SA	Karoonda East Murray (DC)	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**1088**	**0**	**0**
SA	Loxton Waikerie (DC)	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**11481**	**0**	**0**
SA	Mid Murray (DC)	Southern	**Inner Regional**	**Inner-Outer Regional**	**0**	**6464**	**2171**	**0**	**0**
SA	Mount Barker (DC)	Southern	**Inner Regional**	**Inner Regional**	**0**	**33394**	**0**	**0**	**0**
SA	Murray Bridge (RC)	Southern	**Inner Regional**	**Inner Regional**	**0**	**20862**	**0**	**0**	**0**
SA	Peterborough (DC)	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**1678**	**0**	**0**
SA	Renmark Paringa (DC)	Southern	**Outer Regional**	**Outer Regional**	**0**	**0**	**9475**	**0**	**0**
SA	Southern Mallee (DC)	Southern	**Remote**	**Outer Reg-Remote**	**0**	**0**	**231**	**1796**	**0**
SA	The Coorong (DC)	Southern	**Outer Regional**	**Inner-Outer Regional**	**0**	**1928**	**3452**	**0**	**0**
SA	Victor Harbor (C)	Southern	**Inner Regional**	**Inner Regional**	**0**	**14661**	**0**	**0**	**0**
SA	Unincorporated SA	Southern	**Very remote**	**Remote-Very remote**	**5**	**0**	**50**	**652**	**2822**
ACT	Unincorporated ACT	Southern	**Major cities**	**Major cities-Inner Reg**	**396197**	**661**	**0**	**0**	**0**

Appendix 2: Local government area data for different dimensions of community wellbeing

Table A2 provides data for individual local government areas of the Murray-Darling Basin for different dimensions of community wellbeing. The shading indicates whether a community was considered to have poorer than average, average, or better than average outcomes for each dimension.

Local government area	State	Northern or Southern Basin	Remoteness classification	Overall community wellbeing	Population size, ageing and health	Economy, employment & standard of living	Community and social connection	Physical amenity	Services and infrastructure	Community wellbeing index (average of six sub-components)	Total population, 2006	Total population, 2011	Total population, 2016
Albury (C)	NSW	Southern	Inner regional	3	2	2.2	3	2.7	2.5	2.6	46285	47808	51080
Armidale Regional (A)	NSW	Northern	Inner regional	1.5	2.3	1.7	2	2.7	1.5	2.0	27595	28503	29451
Balranald (A)	NSW	Southern	Outer regional	2.5	1.5	2.2	3	2.7	1.8	2.3	2442	2282	2290
Bathurst Regional (A)	NSW	Southern	Inner regional	2.3	2.5	1.8	2	2.3	2.7	2.3	35845	38517	41301
Berrigan (A)	NSW	Southern	Inner regional	2.8	1.5	1.5	2.3	2.7	2.2	2.2	7993	8067	8462
Bland (A)	NSW	Southern	Outer regional	2.5	1.5	1.3	2.8	2.3	1.3	2.0	6098	5862	5958
Blayney (A)	NSW	Southern	Inner regional	2.3	2.3	2	2.3	2.3	2.7	2.3	6594	6985	7259
Bogan (A)	NSW	Northern	Remote/v remote	1	1.3	1.5	2	1	1	1.3	2879	2900	2689
Bourke (A)	NSW	Northern	Remote/v remote	1	1.8	1.5	2.3	1	1	1.4	3094	2867	2633
Brewarrina (A)	NSW	Northern	Remote/v remote	1	2	1.7	2.3	1	1	1.5	1943	1766	1645
Broken Hill (C)	NSW	Southern	Outer regional	1	2	1.7	2.3	1	1	1.5	19366	18519	17709
Cabonne (A)	NSW	Southern	Inner regional	2.5	2	2	2	2.3	2.8	2.3	12396	12823	13391
Carrathool (A)	NSW	Southern	Remote/v remote	2.5	2	1.8	2.3	2.3	1.3	2.0	2817	2585	2723
Central Darling (A)	NSW	Southern	Remote/v remote	1	1.3	1.5	2	1	1	1.3	1939	1992	1831
Cobar (A)	NSW	Northern	Remote/v remote	1	2	1.8	2.3	1	1	1.5	4915	4713	4650
Coolamon (A)	NSW	Southern	Inner regional	2.8	2.3	2	2	2.7	2.3	2.4	4032	4100	4313
Coonamble (A)	NSW	Northern	Remote/v remote	1	1.8	2	2	1	1	1.5	4212	4031	3919
Cootamundra-Gundagai Regional (A)	NSW	Southern	Inner regional	2.8	1.8	1.8	2	2.7	2.3	2.2	11006	10999	11144
Cowra (A)	NSW	Southern	Inner regional	1.5	2	1.7	2	1.7	1.8	1.8	12478	12146	12464
Dubbo Regional (A)	NSW	Northern	Inner regional	2.8	2.3	2.2	2.8	1.3	2.3	2.3	45966	47297	50075
Edward River (A)	NSW	Southern	Inner regional	2.5	1.5	2.2	2.8	2.7	1.8	2.3	9110	8659	8847
Federation (A)	NSW	Southern	Inner regional	2.8	1.8	1.7	2.5	2.7	2.2	2.3	12236	12156	12279
Forbes (A)	NSW	Southern	Outer regional	1.5	1.8	2	2	1.7	1.8	1.8	9361	9169	9589
Gilgandra (A)	NSW	Northern	Outer regional	2.8	1.5	2.3	2.3	2.3	1.8	2.2	4519	4368	4234
Glen Innes Severn (A)	NSW	Northern	Outer regional	1.5	2	1.8	2.3	2.7	1.5	2.0	8782	8655	8832

Local government area	State	Northern or Southern Basin	Remoteness classification	Overall community wellbeing	Population size, ageing and health	Economy, employment & standard of living	Community and social connection	Physical amenity	Services and infrastructure	Community wellbeing index (average of six sub-components)	Total population, 2006	Total population, 2011	Total population, 2016
Greater Hume Shire (A)	NSW	Southern	Inner regional	2.8	1.8	1.8	2.3	2.7	2.2	2.3	9727	9817	10357
Griffith (C)	NSW	Southern	Outer regional	2.3	2.3	2.5	2	1.7	2.2	2.2	23798	24363	25635
Gunnedah (A)	NSW	Northern	Outer regional	1.8	2	1.7	2	1.7	1.3	1.8	11524	12065	12214
Gwydir (A)	NSW	Northern	Outer regional	1.8	1.5	1.5	2.3	1.7	1.3	1.7	5310	4965	5255
Hay (A)	NSW	Southern	Outer regional	2.5	1.8	1.7	2.5	2.3	1.3	2.0	3379	2958	2945
Hilltops (A)	NSW	Southern	Inner regional	2.5	1.8	1.8	2	2.7	2.3	2.2	17861	18213	18497
Inverell (A)	NSW	Northern	Outer regional	1.5	1.8	1.7	2.3	2.7	1.5	1.9	15505	16077	16485
Junee (A)	NSW	Southern	Inner regional	2.8	2.3	2	2	2.7	2.3	2.4	5777	5879	6295
Lachlan (A)	NSW	Southern	Outer regional	1.5	1.5	2	1.8	1.7	1.8	1.7	6672	6477	6195
Leeton (A)	NSW	Southern	Outer regional	3	2.3	2	2.3	2.7	2.7	2.5	11109	11039	11167
Lithgow (C)	NSW	Southern	Inner regional	2.3	1.8	1.7	2	2.3	2.7	2.1	19760	20162	21090
Liverpool Plains (A)	NSW	Northern	Outer regional	1.8	1.8	1.8	2.3	1.7	1.3	1.8	7537	7479	7689
Lockhart (A)	NSW	Southern	Outer regional	2.5	1.8	1.2	2.3	2.3	1.3	1.9	3182	2996	3121
Mid-Western Regional (A)	NSW	Northern	Inner regional	2.8	2	2.3	2.3	2.3	1.8	2.3	21088	22320	24079
Moree Plains (A)	NSW	Northern	Outer regional	1.8	1.8	1.7	2.3	1.7	1.3	1.8	13973	13428	13158
Murray River (A)	NSW	Southern	Inner regional	2.5	1.8	1.8	2.8	2.7	1.8	2.2	10782	10918	11682
Murrumbidgee (A)	NSW	Southern	Outer regional	2.8	2	1.7	2.3	2.7	2.2	2.3	4145	3753	3838
Narrabri (A)	NSW	Northern	Outer regional	1.8	1.8	1.7	2.3	1.7	1.3	1.8	13113	12926	13083
Narrandera (A)	NSW	Southern	Outer regional	2.5	1.5	1.7	2.5	2.3	1.3	2.0	6011	5900	5853
Narromine (A)	NSW	Northern	Outer regional	2.8	2	2.5	2.5	2.3	1.8	2.3	6511	6584	6444
Oberon (A)	NSW	Northern	Inner regional	2.3	2	1.8	2	2.3	2.7	2.2	5029	5041	5301
Orange (C)	NSW	Southern	Inner regional	2.5	2.3	2.3	2	2.3	2.8	2.4	35338	38056	40348
Parkes (A)	NSW	Southern	Outer regional	1.5	2.3	1.8	2	1.7	1.8	1.9	14284	14592	14611
Snowy Monaro Regional (A)	NSW	Southern	Outer regional	1.8	2.3	1.8	2	2.7	1.2	2.0	19450	19691	20216
Snowy Valleys (A)	NSW	Southern	Inner regional	1.8	2	1.8	2.3	2.7	1.2	2.0	14329	14293	14398
Tamworth Regional (A)	NSW	Northern	Inner regional	2	1.8	1.8	2	1.7	2	1.9	53592	56291	59662
Temora (A)	NSW	Southern	Outer regional	2.8	1.8	2	2	2.7	2.3	2.3	5857	5776	6110
Tenterfield (A)	NSW	Northern	Outer regional	1.5	1.8	1.7	2.3	2.7	1.5	1.9	6536	6809	6624
Unincorporated NSW	NSW	Northern	Remote/v remote	1	1.5	1.7	2	1	1	1.4	1055	1057	1054
Upper Lachlan Shire (A)	NSW	Southern	Inner regional	2.5	2	1.8	2	2.7	2.3	2.2	7053	7192	7694
Uralla (A)	NSW	Northern	Outer regional	1.5	1.8	1.7	2.5	2.7	1.5	2.0	5737	6032	6049
Wagga Wagga (C)	NSW	Southern	Inner regional	2.3	2.3	2.3	1.5	1.7	2.5	2.1	57012	59459	62383
Walcha (A)	NSW	Northern	Outer regional	1.5	1.5	1.5	2.5	2.7	1.5	1.9	3188	3021	3090
Walgett (A)	NSW	Northern	Remote/v remote	1	1.3	1.7	2.3	1	1	1.4	6942	6453	6112

Local government area	State	Northern or Southern Basin	Remoteness classification	Overall community wellbeing	Population size, ageing and health	Economy, employment & standard of living	Community and social connection	Physical amenity	Services and infrastructure	Community wellbeing index (average of six sub-components)	Total population, 2006	Total population, 2011	Total population, 2016
Warren (A)	NSW	Northern	Outer regional	1	1.5	1.8	2.3	1	1	1.4	2748	2759	2730
Warrumbungle Shire (A)	NSW	Northern	Outer regional	2.8	1.3	2	2.5	2.3	1.8	2.1	9808	9589	9380
Weddin (A)	NSW	Southern	Outer regional	1.5	1.8	1.7	2.3	1.7	1.8	1.8	3636	3665	3660
Wentworth (A)	NSW	Southern	Outer regional	2.5	1.8	2.2	3	2.7	1.8	2.3	6778	6610	6798
Yass Valley (A)	NSW	Southern	Inner regional	2.3	1.5	1.8	2.5	3	1	2.0	13133	15020	16143
Balonne (S)	QLD	Northern	Remote/v remote	1.5	2	1.7	2.3	1	1.5	1.7	4629	4719	4378
Blackall-Tambo (R)	QLD	Northern	Remote/v remote	1.5	1.8	1.7	2	1.7	2.2	1.8	2017	2199	1903
Bulloo (S)	QLD	Northern	Remote/v remote	1.5	1.5	2.2	1.8	2	2	1.8	374	405	352
Goondiwindi (R)	QLD	Northern	Outer regional	2	1.8	1.7	2.3	2	1.8	1.9	10117	10628	10628
Maranoa (R)	QLD	Northern	Outer regional	1.5	2.3	1.7	2.3	1	1.5	1.7	12290	13074	12664
Murweh (S)	QLD	Northern	Remote/v remote	1.5	2	2.3	1.8	2	2	1.9	4579	4617	4309
Paroo (S)	QLD	Northern	Remote/v remote	1.5	1.8	1.8	1.8	2	2	1.8	1927	1858	1642
South Burnett (R)	QLD	Northern	Inner regional	1.5	1.5	1.7	1.3	2	1.8	1.6	29090	31029	32186
Southern Downs (R)	QLD	Northern	Inner regional	2	2	1.7	2	2	1.8	1.9	31662	33883	35115
Toowoomba (R)	QLD	Northern	Inner regional	2.3	2.5	2.3	1.5	2	2.8	2.2	142283	151189	160779
Western Downs (R)	QLD	Northern	Outer regional	1.5	2.3	2	1.8	1	1.5	1.7	28406	31591	33444
Alexandrina (DC)	SA	Southern	Inner regional	2.5	2.3	2	2	2	2.2	2.2	20713	23699	25871
Barossa (DC)	SA	Southern	Inner regional	2.3	2	1.5	2	2.7	1.2	2.0	20550	22167	23560
Berri and Barmera (DC)	SA	Southern	Outer regional	3	1.8	2.2	2	2.7	2.2	2.3	10935	10567	10545
Goyder (DC)	SA	Southern	Outer regional	2	2.3	2	2	2.7	2.2	2.2	4181	4163	4134
Karoonda East Murray (DC)	SA	Southern	Outer regional	2	1.3	2	1.8	2.3	2.2	1.9	1163	1033	1088
Loxton Waikerie (DC)	SA	Southern	Outer regional	3	1.8	2.2	2	2.7	2.2	2.3	11607	11288	11481
Mid Murray (DC)	SA	Southern	Inner regional	2	1.8	1.7	1.5	2.3	2.2	1.9	8039	8136	8641
Mount Barker (DC)	SA	Southern	Inner regional	2.8	2.5	2	2	2.7	2.5	2.4	26435	29766	33394
Murray Bridge (RC)	SA	Southern	Inner regional	1.8	2	2.3	1.5	1.3	2.8	2.0	17678	19742	20862
Peterborough (DC)	SA	Southern	Outer regional	2	2.3	1.8	1.8	2.7	2.2	2.1	1904	1731	1678
Renmark Paringa (DC)	SA	Southern	Outer regional	3	2.3	2.5	2	2.7	2.2	2.5	9452	9244	9475
Southern Mallee (DC)	SA	Southern	Remote/v remote	2	1.8	2.2	1.8	2.3	2.2	2.1	2138	2101	2028
The Coorong (DC)	SA	Southern	Outer regional	2	1.5	1.8	2	2.3	2.2	2.0	5666	5523	5386
Unincorporated SA	SA	Southern	Remote/v remote	2	1.5	1.7	2.5	2	1	1.8	3743	4444	3524
Victor Harbor (C)	SA	Southern	Inner regional	2.8	1.8	1.8	1.5	2.7	2.5	2.2	12013	13841	14661
Alpine (S)	VIC	Southern	Inner regional	3	2.3	2	3	3	2.5	2.6	11997	11880	12335
Ararat (RC)	VIC	Southern	Inner regional	2	2	1.8	1.8	2.7	1.7	2.0	11256	11184	11599
Ballarat (C)	VIC	Southern	Inner regional	3	2.3	2.3	2.3	2.7	2.8	2.6	85196	93501	101689

Local government area	State	Northern or Southern Basin	Remoteness classification	Overall community wellbeing	Population size, ageing and health	Economy, employment & standard of living	Community and social connection	Physical amenity	Services and infrastructure	Community wellbeing index (average of six sub-components)	Total population, 2006	Total population, 2011	Total population, 2016
Benalla (RC)	VIC	Southern	Inner regional	2.5	2.3	1.7	2	2.3	2.2	2.2	13524	13648	13863
Buloke (S)	VIC	Southern	Outer regional	1.8	1.8	1.7	2.3	2	1.8	1.9	6850	6383	6202
Campaspe (S)	VIC	Southern	Inner regional	3	2	2.3	2	2.3	2.5	2.4	36209	36364	37054
Central Goldfields (S)	VIC	Southern	Inner regional	3	1.5	2.2	2	3	2	2.3	12324	12496	12993
East Gippsland (S)	VIC	Southern	Outer regional	2.3	1.8	2	1.5	2.7	1.2	1.9	40038	42193	45041
Gannawarra (S)	VIC	Southern	Outer regional	1.5	1.8	1.8	2.3	1.3	1.3	1.7	11295	10366	10548
Goulburn Mulwaree (A)	NSW	Southern	Inner regional	2.5	2.3	2.2	2	2.7	2.3	2.3	26084	27480	29608
Greater Bendigo (C)	VIC	Southern	Inner regional	2.3	2.5	2	2.3	2.3	2.8	2.4	93254	100617	110479
Greater Shepparton (C)	VIC	Southern	Inner regional	1.8	2	2.2	2.3	1.7	2.7	2.1	57090	60448	63839
Hepburn (S)	VIC	Southern	Inner regional	2.8	2	2.2	2.8	2.7	2.3	2.5	13732	14368	15327
Hindmarsh (S)	VIC	Southern	Outer regional	2.5	2	2	2.3	2	1.7	2.1	6040	5797	5725
Horsham (RC)	VIC	Southern	Outer regional	2	2.3	2	2	2.7	1.7	2.1	18497	19279	19641
Indigo (S)	VIC	Southern	Inner regional	3	2	2	2.8	3	2.7	2.6	14801	15179	15953
Loddon (S)	VIC	Southern	Outer regional	1.5	1.8	1.7	2	1.3	1.3	1.6	7835	7460	7512
Macedon Ranges (S)	VIC	Southern	Inner regional	3	2.3	2.3	2.3	3	2	2.5	38362	41860	46103
Mansfield (S)	VIC	Southern	Outer regional	3	2	2	2.8	3	1.7	2.4	7192	7891	8589
Mildura (RC)	VIC	Southern	Outer regional	2	2	2.5	2	1.7	2.2	2.1	49814	50979	53878
Mitchell (S)	VIC	Southern	Inner regional	2.3	2	2	2.5	2.7	1.2	2.1	30929	34637	40916
Moira (S)	VIC	Southern	Inner regional	2.8	2	2	2.3	2.3	1.8	2.2	27083	28124	29108
Mount Alexander (S)	VIC	Southern	Inner regional	3	2.3	2	2.3	3	2	2.4	17068	17592	18762
Murrindindi (S)	VIC	Southern	Inner regional	3	2	2.2	2.8	3	1.7	2.5	13672	13057	13730
Northern Grampians (S)	VIC	Southern	Inner regional	2	1.8	2	2	2.7	1.7	2.0	11911	11844	11436
Pyrenees (S)	VIC	Southern	Inner regional	2	2	1.8	1.8	2.7	1.7	2.0	6555	6668	7240
Strathbogie (S)	VIC	Southern	Inner regional	2.5	2.3	2.2	2	2.3	2.2	2.3	9296	9485	10272
Swan Hill (RC)	VIC	Southern	Outer regional	1.8	2	2	2.3	2	1.8	2.0	20631	20449	20587
Towong (S)	VIC	Southern	Outer regional	3	2.3	2.3	2.8	3	2.5	2.7	6018	5889	5986
Wangaratta (RC)	VIC	Southern	Inner regional	3	2	2.2	2.8	3	2.7	2.6	26390	26814	28310
West Wimmera (S)	VIC	Southern	Outer regional	2.5	1.8	2	2.8	2	1.7	2.1	4472	4251	3905
Wodonga (C)	VIC	Southern	Inner regional	3	2.3	2.2	2.8	3	2.7	2.7	33006	35519	39347
Yarriambiack (S)	VIC	Southern	Outer regional	2.5	2.3	2	2.3	2	1.7	2.1	7516	7090	6675

Appendix 3: Access to services and infrastructure

Table A3 identifies average scores for access to services and infrastructure by local government area. There are some limitations to this data: in particular, in less populated areas, there was insufficient sample in some LGAs to analyse data for that LGA on its own. In these cases, the data reported are for 2-4 LGAs of similar remoteness, located adjacent to each other, with the average score for respondents in those two to four LGAs.

Table A3 Ratings of access to different services and infrastructure, by local government area

STE	Local government area	Remoteness	Rating of access to service or infrastructure in LGA person lives in, from 1 = very poor to 7 = very good. Data source: 2018 Regional Wellbeing Survey. Data for LGAs with smaller responses are an average for between two to four adjacent LGAs of similar remoteness.					
			General health services eg GPs	Quality of local schools	Local govern-ment services	Professional services e.g. accountants, lawyers	Mobile phone reception	High speed, reliable internet
NSW	Albury (C)	Inner Regional	5.0	5.7	4.7	4.90	4.6	4.1
NSW	Armidale Regional (A)	Inner Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Balranald (A)	Outer Regional	4.3	5.6	4.6	4.88	4.2	3.6
NSW	Bathurst Regional (A)	Inner Regional	5.6	5.7	4.7	5.15	5.0	4.5
NSW	Berrigan (A)	Inner Regional	5.3	5.7	4.7	4.40	4.4	4.2
NSW	Bland (A)	Outer Regional	3.7	4.8	4.6	3.71	4.2	4.1
NSW	Blayney (A)	Inner Regional	5.6	5.7	4.7	5.15	5.0	4.5
NSW	Bogan (A)	Remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Bourke (A)	Remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Brewarrina (A)	Very remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Broken Hill (C)	Outer Regional	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Cabonne (A)	Inner Regional	6.0	5.9	4.9	5.41	5.3	4.5
NSW	Carrathool (A)	Remote	3.7	4.8	4.6	3.71	4.2	4.1
NSW	Central Darling (A)	Very remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Cobar (A)	Remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Coolamon (A)	Inner Regional	4.8	5.4	4.5	4.81	5.0	4.1
NSW	Coonamble (A)	Remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Cowra (A)	Inner Regional	4.5	5.3	4.8	4.56	4.1	4.0
NSW	Edward River (A)	Inner Regional	4.3	5.6	4.6	4.88	4.2	3.6
NSW	Federation (A)	Inner Regional	5.3	5.7	4.7	4.40	4.4	4.2
NSW	Forbes (A)	Outer Regional	4.5	5.3	4.8	4.56	4.1	4.0
NSW	Gilgandra (A)	Outer Regional	4.2	5.8	4.8	4.06	4.1	4.0
NSW	Glen Innes Severn (A)	Outer Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Goulburn Mulwaree (A)	Inner Regional	5.0	5.6	4.1	4.80	4.6	4.2
NSW	Greater Hume Shire (A)	Inner Regional	5.3	5.7	4.7	4.40	4.4	4.2
NSW	Griffith (C)	Outer Regional	4.8	5.0	4.7	5.83	4.8	4.1
NSW	Cootamundra-Gundagai Regional (A)	Inner Regional	4.8	5.4	4.5	4.81	5.0	4.1
NSW	Gunnedah (A)	Outer Regional	4.1	5.0	4.2	4.44	4.1	3.5
NSW	Gwydir (A)	Outer Regional	4.1	5.0	4.2	4.44	4.1	3.5
NSW	Hay (A)	Outer Regional	3.7	4.8	4.6	3.71	4.2	4.1
NSW	Hilltops (A)	Inner Regional	5.0	5.6	4.1	4.80	4.6	4.2
NSW	Inverell (A)	Outer Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Junee (A)	Inner Regional	4.8	5.4	4.5	4.81	5.0	4.1
NSW	Lachlan (A)	Outer Regional	4.5	5.3	4.8	4.56	4.1	4.0

STE	Local government area	Remoteness	Rating of access to service or infrastructure in LGA person lives in, from 1 = very poor to 7 = very good. Data source: 2018 Regional Wellbeing Survey. Data for LGAs with smaller responses are an average for between two to four adjacent LGAs of similar remoteness.					
			General health services eg GPs	Quality of local schools	Local govern-ment services	Professional services e.g. accountants, lawyers	Mobile phone reception	High speed, reliable internet
NSW	Leeton (A)	Outer Regional	4.1	6.1	5.5	5.15	5.0	4.6
NSW	Lithgow (C)	Inner Regional	5.6	5.7	4.7	5.15	5.0	4.5
NSW	Liverpool Plains (A)	Outer Regional	4.1	5.0	4.2	4.44	4.1	3.5
NSW	Lockhart (A)	Outer Regional	3.7	4.8	4.6	3.71	4.2	4.1
NSW	Mid-Western Regional (A)	Inner Regional	4.2	5.8	4.8	4.06	4.1	4.0
NSW	Moree Plains (A)	Outer Regional	4.1	5.0	4.2	4.44	4.1	3.5
NSW	Murray River (A)	Inner Regional	4.3	5.6	4.6	4.88	4.2	3.6
NSW	Murrumbidgee (A)	Outer Regional	5.3	5.7	4.7	4.40	4.4	4.2
NSW	Narrabri (A)	Outer Regional	4.1	5.0	4.2	4.44	4.1	3.5
NSW	Narrandera (A)	Outer Regional	3.7	4.8	4.6	3.71	4.2	4.1
NSW	Narromine (A)	Outer Regional	4.2	5.8	4.8	4.06	4.1	4.0
NSW	Oberon (A)	Inner Regional	5.6	5.7	4.7	5.15	5.0	4.5
NSW	Orange (C)	Inner Regional	6.0	5.9	4.9	5.41	5.3	4.5
NSW	Parkes (A)	Outer Regional	4.5	5.3	4.8	4.56	4.1	4.0
NSW	Queanbeyan-Palerang Regional (A)	Major cities	5.1	5.1	4.0	4.15	4.3	3.6
NSW	Snowy Monaro Regional (A)	Outer Regional	4.2	5.1	3.5	3.80	3.8	4.0
NSW	Snowy Valleys (A)	Inner Regional	4.2	5.1	3.5	3.80	3.8	4.0
NSW	Tamworth Regional (A)	Inner Regional	4.3	5.1	4.4	4.78	4.8	4.3
NSW	Temora (A)	Outer Regional	4.8	5.4	4.5	4.81	5.0	4.1
NSW	Tenterfield (A)	Outer Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Upper Lachlan Shire (A)	Inner Regional	5.0	5.6	4.1	4.80	4.6	4.2
NSW	Uralla (A)	Outer Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Wagga Wagga (C)	Inner Regional	5.1	5.4	4.9	5.49	4.9	4.1
NSW	Walcha (A)	Outer Regional	4.2	5.1	4.1	4.71	4.3	4.5
NSW	Walgett (A)	Remote	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Warren (A)	Outer Regional	3.9	3.7	3.8	3.46	4.1	3.3
NSW	Warrumbungle Shire (A)	Outer Regional	4.2	5.8	4.8	4.06	4.1	4.0
NSW	Weddin (A)	Outer Regional	4.5	5.3	4.8	4.56	4.1	4.0
NSW	Wentworth (A)	Outer Regional	4.3	5.6	4.6	4.88	4.2	3.6
NSW	Dubbo Regional (A)	Inner Regional	4.5	5.3	4.6	5.35	4.8	4.8
NSW	Yass Valley (A)	Inner Regional	5.1	5.1	4.0	4.15	4.3	3.6
NSW	Unincorporated NSW	Very remote	3.9	3.7	3.8	3.46	4.1	3.3
VIC	Alpine (S)	Inner Regional	5.1	5.9	5.0	4.35	4.8	4.1
VIC	Ararat (RC)	Inner Regional	3.9	5.1	4.3	4.67	4.7	4.0
VIC	Ballarat (C)	Inner Regional	5.6	5.8	4.5	5.34	5.2	4.8
VIC	Benalla (RC)	Inner Regional	5.3	4.8	4.5	4.79	4.6	4.1
VIC	Buloke (S)	Outer Regional	3.8	5.4	4.3	4.47	4.8	4.2
VIC	Campaspe (S)	Inner Regional	5.0	5.8	4.4	4.47	5.1	4.5
VIC	Central Goldfields (S)	Inner Regional	4.9	5.6	4.4	4.69	4.5	3.8
VIC	East Gippsland (S)	Outer Regional	3.8	4.7	3.9	4.14	4.2	3.7
VIC	Gannawarra (S)	Outer Regional	3.5	4.9	4.0	3.18	4.5	3.7
VIC	Greater Bendigo (C)	Inner Regional	5.4	5.4	4.8	5.34	5.1	4.6
VIC	Greater Shepparton (C)	Inner Regional	5.0	5.3	4.7	5.36	5.2	4.7
VIC	Hepburn (S)	Inner Regional	5.5	5.3	4.0	4.36	5.1	4.7

STE	Local government area	Remoteness	Rating of access to service or infrastructure in LGA person lives in, from 1 = very poor to 7 = very good. Data source: 2018 Regional Wellbeing Survey. Data for LGAs with smaller responses are an average for between two to four adjacent LGAs of similar remoteness.					
			General health services eg GPs	Quality of local schools	Local govern-ment services	Professional services e.g. accountants, lawyers	Mobile phone reception	High speed, reliable internet
VIC	Hindmarsh (S)	Outer Regional	3.5	4.9	4.3	4.01	4.9	4.1
VIC	Horsham (RC)	Outer Regional	3.9	5.1	4.3	4.67	4.7	4.0
VIC	Indigo (S)	Inner Regional	5.2	5.7	4.9	5.29	4.8	4.4
VIC	Loddon (S)	Outer Regional	3.5	4.9	4.0	3.18	4.5	3.7
VIC	Macedon Ranges (S)	Inner Regional	4.9	5.6	4.4	4.69	4.5	3.8
VIC	Mansfield (S)	Outer Regional	4.9	5.4	4.9	3.77	4.1	3.7
VIC	Mildura (RC)	Outer Regional	3.4	5.3	4.3	4.94	5.4	4.2
VIC	Mitchell (S)	Inner Regional	5.3	4.8	4.5	4.79	4.6	4.1
VIC	Moira (S)	Inner Regional	4.7	5.8	4.0	4.68	4.5	3.8
VIC	Moorabool (S)	Major cities	5.5	5.3	4.0	4.36	5.1	4.7
VIC	Mount Alexander (S)	Inner Regional	4.9	5.6	4.4	4.69	4.5	3.8
VIC	Murrindindi (S)	Inner Regional	4.9	5.4	4.9	3.77	4.1	3.7
VIC	Northern Grampians (S)	Inner Regional	3.9	5.1	4.3	4.67	4.7	4.0
VIC	Pyrenees (S)	Inner Regional	3.9	5.1	4.3	4.67	4.7	4.0
VIC	Strathbogie (S)	Inner Regional	5.3	4.8	4.5	4.79	4.6	4.1
VIC	Swan Hill (RC)	Outer Regional	3.8	5.4	4.3	4.47	4.8	4.2
VIC	Towong (S)	Outer Regional	5.1	5.9	5.0	4.35	4.8	4.1
VIC	Wangaratta (RC)	Inner Regional	5.2	5.7	4.9	5.29	4.8	4.4
VIC	West Wimmera (S)	Outer Regional	3.5	4.9	4.3	4.01	4.9	4.1
VIC	Wodonga (C)	Inner Regional	5.2	5.7	4.9	5.29	4.8	4.4
VIC	Yarra Ranges (S)	Major cities	6.0	5.6	5.0	5.38	5.6	4.8
VIC	Yarriambiack (S)	Outer Regional	3.5	4.9	4.3	4.01	4.9	4.1
VIC	Unincorporated Vic	Outer Regional						
QLD	Balonne (S)	Remote	4.8	5.5	3.7	3.65	3.9	3.1
QLD	Blackall-Tambo (R)	Very remote	4.7	5.5	4.4	4.41	4.8	4.5
QLD	Bulloo (S)	Very remote	5.2	5.7	4.0	4.32	4.5	4.0
QLD	Goondiwindi (R)	Outer Regional	5.3	5.7	3.7	4.51	4.3	3.9
QLD	Maranoa (R)	Outer Regional	4.8	5.5	3.7	3.65	3.9	3.1
QLD	Murweh (S)	Very remote	5.2	5.7	4.0	4.32	4.5	4.0
QLD	Paroo (S)	Very remote	5.2	5.7	4.0	4.32	4.5	4.0
QLD	South Burnett (R)	Inner Regional	4.3	5.2	4.3	4.53	4.7	4.3
QLD	Southern Downs (R)	Inner Regional	5.3	5.7	3.7	4.51	4.3	3.9
QLD	Toowoomba (R)	Inner Regional	5.4	6.0	4.4	4.81	5.0	4.8
QLD	Western Downs (R)	Outer Regional	4.8	5.5	3.7	3.65	3.9	3.1
SA	Adelaide Hills (DC)	Major cities	5.2	5.4	4.5	4.46	5.3	5.0
SA	Alexandrina (DC)	Inner Regional	4.6	5.2	4.3	3.99	5.0	4.7
SA	Barossa (DC)	Inner Regional	5.1	5.4	4.6	4.70	5.2	4.7
SA	Berri and Barmera (DC)	Outer Regional	4.8	5.4	5.1	5.01	4.5	4.0
SA	Goyder (DC)	Outer Regional	4.6	5.3	4.3	3.70	5.2	4.6
SA	Karoonda East Murray (DC)	Outer Regional	5.2	5.1	4.6	3.68	4.9	4.6
SA	Loxton Waikerie (DC)	Outer Regional	4.8	5.4	5.1	5.01	4.5	4.0
SA	Mid Murray (DC)	Inner Regional	5.2	5.1	4.6	3.68	4.9	4.6
SA	Mount Barker (DC)	Inner Regional	5.2	5.4	4.5	4.46	5.3	5.0
SA	Murray Bridge (RC)	Inner Regional	5.6	5.1	5.0	4.84	5.4	4.7
SA	Peterborough (DC)	Outer Regional	4.6	5.3	4.3	3.70	5.2	4.6
SA	Renmark Paringa (DC)	Outer Regional	4.8	5.4	5.1	5.01	4.5	4.0

STE	Local government area	Remoteness	Rating of access to service or infrastructure in LGA person lives in, from 1 = very poor to 7 = very good. Data source: 2018 Regional Wellbeing Survey. Data for LGAs with smaller responses are an average for between two to four adjacent LGAs of similar remoteness.					
			General health services eg GPs	Quality of local schools	Local govern-ment services	Professional services e.g. accountants, lawyers	Mobile phone reception	High speed, reliable internet
SA	Southern Mallee (DC)	Remote	5.2	5.1	4.6	3.68	4.9	4.6
SA	The Coorong (DC)	Outer Regional	5.2	5.1	4.6	3.68	4.9	4.6
SA	Victor Harbor (C)	Inner Regional	5.2	5.4	4.5	4.46	5.3	5.0
SA	Unincorporated SA	Very remote	4.2	4.9	4.6	4.39	5.1	4.7
ACT	Unincorporated ACT	Major cities	5.3	5.3	4.7	5.07	5.4	5.1

Appendix 4: Economic diversity, dependence on agriculture, population size and months of drought

Table A4 Remoteness, population, economic diversity, dependent on agriculture and drought incidence in Basin LGAs

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
NSW	Albury (C)	Inner Regional	46285	51080	39.8%	36.3%	1.2%	1.4%	1.0%	13	24	6	0	0	4
NSW	Armidale Regional (A)	Inner Regional	27595	29451	41.9%	44.0%	10.7%	10.8%	3.8%	10	0	9	2	0	4
NSW	Balranald (A)	Outer Regional	2442	2290	47.8%	48.7%	29.7%	30.0%	48.6%	20	8	6	0	2	3
NSW	Bathurst Regional (A)	Inner Regional	35845	41301	36.2%	36.0%	4.5%	3.8%	12.7%	12	15	6	0	6	12
NSW	Berrigan (A)	Inner Regional	7993	8462	41.4%	39.2%	22.2%	18.5%	72.4%	11	21	5	0	1	5
NSW	Bland (A)	Outer Regional	6098	5958	48.2%	44.9%	31.7%	28.6%	3.8%	28	24	5	0	2	3
NSW	Blayney (A)	Inner Regional	6594	7259	35.8%	33.9%	15.6%	12.6%	2.6%	14	17	9	3	3	12
NSW	Bogan (A)	Remote	2879	2689	47.8%	45.7%	30.4%	22.9%	8.2%	11	11	5	0	5	3
NSW	Bourke (A)	Remote	3094	2633	47.8%	43.8%	23.5%	14.5%	2.5%	17	5	14	0	4	5
NSW	Brewarrina (A)	Very remote	1943	1645	58.3%	58.4%	24.6%	24.1%	4.7%	20	13	23	0	5	8
NSW	Broken Hill (C)	Outer Regional	19366	17709	40.4%	41.1%	1.1%	1.7%	0.0%	12	7	3	0	3	12
NSW	Cabonne (A)	Inner Regional	12396	13391	44.5%	39.6%	22.9%	18.0%	12.6%	12	11	6	0	3	12

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
NSW	Carrathool (A)	Remote	2817	2723	61.9%	58.5%	49.7%	46.5%	74.2%	27	20	3	0	2	5
NSW	Central Darling (A)	Very remote	1939	1831	55.2%	63.5%	32.6%	37.9%	0.9%	14	4	5	0	5	5
NSW	Cobar (A)	Remote	4915	4650	48.6%	50.9%	9.6%	11.7%	2.1%	17	7	5	0	5	7
NSW	Coolamon (A)	Inner Regional	4032	4313	46.5%	43.3%	29.2%	22.6%	5.5%	17	28	6	0	2	3
NSW	Coonamble (A)	Remote	4212	3919	50.6%	55.5%	31.0%	31.1%	3.0%	13	10	10	0	6	12
NSW	Cowra (A)	Inner Regional	12478	12464	41.6%	39.6%	17.3%	17.1%	16.7%	13	18	7	0	0	3
NSW	Edward River (A)	Inner Regional	9110	8847	42.9%	38.5%	20.7%	16.6%	69.5%	11	14	6	0	0	5
NSW	Federation (A)	Inner Regional	12236	12279	45.3%	39.5%	20.2%	16.6%	19.0%	11	23	6	0	0	4
NSW	Forbes (A)	Outer Regional	9361	9589	42.4%	40.8%	20.8%	18.1%	29.6%	20	13	5	0	0	5
NSW	Gilgandra (A)	Outer Regional	4519	4234	51.7%	49.1%	31.0%	27.9%	2.3%	16	9	8	0	6	5
NSW	Glen Innes Severn (A)	Outer Regional	8782	8832	44.1%	41.2%	21.5%	18.9%	1.4%	12	3	8	0	0	5
NSW	Goulburn Mulwaree (A)	Inner Regional	26084	29608	37.4%	36.6%	4.0%	3.8%	4.4%	13	17	3	0	3	4
NSW	Greater Hume Shire (A)	Inner Regional	9727	10357	44.5%	41.1%	25.6%	22.1%	3.6%	13	25	2	0	3	3
NSW	Griffith (C)	Outer Regional	23798	25635	44.9%	41.9%	13.3%	11.2%	85.3%	25	23	6	0	2	3
NSW	Cootamundra-Gundagai Regional (A)	Inner Regional	11006	11144	37.4%	37.9%	16.9%	15.2%	5.8%	13	24	10	0	2	4
NSW	Gunnedah (A)	Outer Regional	11524	12214	37.6%	37.7%	18.2%	13.8%	18.7%	11	4	7	4	0	12

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
NSW	Gwydir (A)	Outer Regional	5310	5255	56.4%	56.9%	41.7%	39.9%	5.2%	7	16	7	0	0	10
NSW	Hay (A)	Outer Regional	3379	2945	47.1%	44.6%	27.2%	23.8%	38.2%	14	15	11	0	0	3
NSW	Hilltops (A)	Inner Regional	17861	18497	45.5%	42.5%	23.2%	20.8%	8.8%	11	20	12	0	2	3
NSW	Inverell (A)	Outer Regional	15505	16485	41.2%	37.8%	15.4%	12.4%	9.6%	9	14	8	0	0	12
NSW	Junee (A)	Inner Regional	5777	6295	38.5%	39.0%	18.7%	16.4%	4.0%	17	34	7	0	2	4
NSW	Lachlan (A)	Outer Regional	6672	6195	52.6%	49.0%	35.5%	28.1%	6.4%	16	14	5	0	0	12
NSW	Leeton (A)	Outer Regional	11109	11167	43.8%	41.0%	12.1%	11.9%	84.5%	20	25	5	0	2	4
NSW	Lithgow (C)	Inner Regional	19760	21090	31.1%	30.9%	3.4%	2.9%	0.1%	13	8	5	0	0	10
NSW	Liverpool Plains (A)	Outer Regional	7537	7689	45.2%	43.5%	27.8%	24.5%	15.9%	8	7	4	0	2	12
NSW	Lockhart (A)	Outer Regional	3182	3121	50.6%	51.0%	34.1%	28.7%	6.8%	15	28	9	0	2	3
NSW	Mid-Western Regional (A)	Inner Regional	21088	24079	35.1%	35.4%	13.1%	8.9%	11.8%	6	15	7	0	5	12
NSW	Moree Plains (A)	Outer Regional	13973	13158	44.6%	43.5%	26.9%	25.1%	19.3%	14	14	8	0	4	5
NSW	Murray River (A)	Inner Regional	10782	11682	46.1%	41.1%	26.1%	19.3%	67.2%	15	15	7	3	0	4
NSW	Murrumbidgee (A)	Outer Regional	4145	3838	57.9%	52.2%	40.2%	36.4%	73.7%	10	21	5	0	2	4
NSW	Narrabri (A)	Outer Regional	13113	13083	43.1%	38.6%	25.2%	19.6%	22.8%	8	9	10	0	6	12

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
NSW	Narrandera (A)	Outer Regional	6011	5853	40.7%	41.9%	19.4%	19.4%	16.0%	20	28	5	0	2	3
NSW	Narromine (A)	Outer Regional	6511	6444	48.5%	47.2%	29.6%	26.2%	17.6%	5	10	5	0	2	5
NSW	Oberon (A)	Inner Regional	5029	5301	46.7%	39.7%	17.4%	16.5%	3.3%	16	15	5	0	6	12
NSW	Orange (C)	Inner Regional	35338	40348	37.4%	39.1%	2.5%	2.2%	20.9%	10	15	7	2	4	12
NSW	Parkes (A)	Outer Regional	14284	14611	38.1%	34.6%	14.2%	12.0%	1.4%	15	12	5	0	0	6
NSW	Queanbeyan-Palerang Regional (A)	Major cities	48289	56027	41.6%	45.1%	2.0%	1.7%	9.0%	11	19	1	0	0	4
NSW	Snowy Monaro Regional (A)	Outer Regional	19450	20216	35.8%	32.8%	11.7%	9.9%	4.0%	17	28	1	0	0	4
NSW	Snowy Valleys (A)	Inner Regional	14329	14398	44.2%	41.7%	19.7%	18.2%	14.9%	14	16	6	1	2	3
NSW	Tamworth Regional (A)	Inner Regional	53592	59662	34.4%	35.1%	8.1%	6.7%	17.4%	7	12	8	0	0	12
NSW	Temora (A)	Outer Regional	5857	6110	44.5%	41.8%	22.3%	21.0%	1.0%	23	26	5	0	5	3
NSW	Tenterfield (A)	Outer Regional	6536	6624	44.0%	44.5%	22.6%	23.2%	10.3%	20	3	5	2	0	5
NSW	Upper Lachlan Shire (A)	Inner Regional	7053	7694	50.5%	46.3%	31.2%	25.7%	4.4%	13	15	5	4	2	3
NSW	Uralla (A)	Outer Regional	5737	6049	44.4%	42.6%	19.7%	16.3%	4.4%	8	11	12	4	0	12
NSW	Wagga Wagga (C)	Inner Regional	57012	62383	35.4%	37.1%	4.6%	4.1%	7.2%	14	28	8	0	4	3
NSW	Walcha (A)	Outer Regional	3188	3090	58.1%	55.7%	45.4%	40.5%	0.7%	10	2	9	2	0	7
NSW	Walgett (A)	Remote	6942	6112	48.3%	51.1%	28.5%	27.4%	6.5%	14	4	25	0	6	12

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
NSW	Warren (A)	Outer Regional	2748	2730	59.8%	57.4%	45.1%	41.1%	7.5%	10	10	5	0	2	5
NSW	Warrumbungle Shire (A)	Outer Regional	9808	9380	51.2%	51.2%	31.3%	27.6%	4.0%	14	12	10	0	5	12
NSW	Weddin (A)	Outer Regional	3636	3660	55.3%	53.9%	39.6%	37.5%	3.2%	12	15	5	0	0	3
NSW	Wentworth (A)	Outer Regional	6778	6798	39.8%	38.4%	23.8%	20.0%	72.5%	19	8	4	0	1	4
NSW	Dubbo Regional (A)	Inner Regional	45966	50075	34.8%	35.6%	6.5%	5.1%	9.9%	11	9	8	0	3	12
NSW	Yass Valley (A)	Inner Regional	13133	16143	35.7%	39.0%	10.4%	7.6%	5.9%	10	20	10	3	2	3
NSW	Unincorporated NSW	Very remote	1055	1054	66.8%	66.8%	42.6%	41.4%	0.9%	16	6	6	0	3	12
VIC	Alpine (S)	Inner Regional	11997	12335	36.7%	34.9%	11.1%	9.0%	38.7%	14	20	6	2	2	3
VIC	Ararat (RC)	Inner Regional	11256	11599	43.8%	41.1%	19.3%	14.9%	3.5%	10	21	17	4	0	2
VIC	Ballarat (C)	Inner Regional	85196	101689	40.2%	39.1%	1.6%	1.6%	21.2%	13	31	16	5	0	3
VIC	Benalla (RC)	Inner Regional	13524	13863	39.1%	33.2%	10.6%	9.8%		12	29	11	2	0	5
VIC	Buloke (S)	Outer Regional	6850	6202	53.1%	51.3%	33.3%	29.2%	5.2%	14	13	17	4	0	6
VIC	Campaspe (S)	Inner Regional	36209	37054	42.9%	39.0%	16.2%	13.3%	74.9%	26	14	16	4	0	3
VIC	Central Goldfields (S)	Inner Regional	12324	12993	45.3%	41.3%	7.4%	7.0%	16.8%	25	23	20	4	0	8
VIC	East Gippsland (S)	Outer Regional	40038	45041	35.4%	34.6%	9.8%	8.8%	16.0%	19	17	2	0	6	6

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
VIC	Gannawarra (S)	Outer Regional	11295	10548	50.3%	46.3%	29.6%	24.0%	66.6%	24	11	16	4	0	4
VIC	Greater Bendigo (C)	Inner Regional	93254	110479	39.0%	37.1%	2.9%	2.7%	19.9%	24	11	12	4	0	4
VIC	Greater Shepparton (C)	Inner Regional	57090	63839	38.7%	36.3%	10.0%	8.3%	74.1%	12	19	12	0	0	3
VIC	Hepburn (S)	Inner Regional	13732	15327	32.0%	33.3%	8.5%	7.2%	26.4%	18	29	13	4	0	3
VIC	Hindmarsh (S)	Outer Regional	6040	5725	53.6%	53.3%	28.4%	26.2%	5.1%	13	19	14	4	0	5
VIC	Horsham (RC)	Outer Regional	18497	19641	38.3%	37.5%	11.1%	9.2%	4.1%	9	17	21	4	0	7
VIC	Indigo (S)	Inner Regional	14801	15953	38.3%	36.3%	10.7%	7.9%	25.3%	12	21	6	0	0	3
VIC	Loddon (S)	Outer Regional	7835	7512	57.2%	53.9%	39.1%	35.5%	48.5%	25	11	13	4	0	4
VIC	Macedon Ranges (S)	Inner Regional	38362	46103	31.3%	32.1%	3.3%	2.6%	10.6%	15	25	17	5	0	0
VIC	Mansfield (S)	Outer Regional	7192	8589	36.1%	33.1%	10.3%	9.3%	8.7%	18	24	12	3	2	3
VIC	Mildura (RC)	Outer Regional	49814	53878	37.1%	36.2%	13.3%	10.8%	66.5%	15	16	10	4	0	5
VIC	Mitchell (S)	Inner Regional	30929	40916	36.3%	32.7%	3.8%	2.5%	8.8%	15	19	17	3	0	2
VIC	Moira (S)	Inner Regional	27083	29108	47.3%	40.4%	20.6%	16.2%	69.1%	15	20	9	0	0	5
VIC	Moorabool (S)	Major cities	25477	31820	32.2%	32.1%	5.7%	4.2%	25.7%	14	33	12	5	0	7
VIC	Mount Alexander (S)	Inner Regional	17068	18762	41.0%	36.6%	5.9%	4.3%	19.6%	17	21	18	4	0	4

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
VIC	Murrindindi (S)	Inner Regional	13672	13730	32.3%	33.1%	12.1%	10.5%	15.5%	18	24	19	4	3	3
VIC	Northern Grampians (S)	Inner Regional	11911	11436	39.8%	40.2%	14.3%	13.1%	4.3%	10	20	24	4	0	8
VIC	Pyrenees (S)	Inner Regional	6555	7240	46.9%	41.3%	25.2%	20.5%	7.2%	16	22	20	4	0	8
VIC	Strathbogie (S)	Inner Regional	9296	10272	42.7%	38.7%	21.7%	19.0%	10.2%	24	23	12	2	0	3
VIC	Swan Hill (RC)	Outer Regional	20631	20587	42.8%	39.6%	22.3%	17.6%	62.0%	16	12	16	4	0	4
VIC	Towong (S)	Outer Regional	6018	5986	44.5%	46.0%	25.3%	23.8%	15.2%	12	20	4	2	0	3
VIC	Wangaratta (RC)	Inner Regional	26390	28310	41.6%	37.3%	9.1%	7.5%	27.4%	13	20	11	2	2	5
VIC	West Wimmera (S)	Outer Regional	4472	3905	63.4%	63.7%	47.3%	44.0%	9.8%	10	19	15	4	0	0
VIC	Wodonga (C)	Inner Regional	33006	39347	40.3%	38.3%	1.1%	1.4%	14.5%	12	19	5	0	0	4
VIC	Yarra Ranges (S)	Major cities	140216	149542	38.1%	35.2%	2.3%	2.2%	74.8%	20	27	13	4	3	3
VIC	Yarriambiack (S)	Outer Regional	7516	6675	56.1%	55.3%	30.6%	27.5%	5.0%	13	17	11	4	0	6
VIC	Unincorporated Vic	Outer Regional	728	876	62.6%	56.1%	4.3%	5.2%		17	21	4	4	2	3
QLD	Balonne (S)	Remote	4629	4378	54.1%	55.0%	36.2%	35.2%	21.2%	14	15	29	2	4	5
QLD	Blackall-Tambo (R)	Very remote	2017	1903	52.7%	52.1%	32.8%	31.8%	0.6%	12	2	22	5	6	2
QLD	Bulloo (S)	Very remote	374	352	72.4%	65.0%	40.8%	29.5%	1.0%	20	11	10	1	3	8
QLD	Goondiwindi (R)	Outer Regional	10117	10628	47.6%	46.8%	28.5%	27.6%	13.5%	11	15	10	0	0	5

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
QLD	Maranoa (R)	Outer Regional	12290	12664	42.0%	39.3%	22.8%	19.5%	2.1%	10	17	21	0	4	1
QLD	Murweh (S)	Very remote	4579	4309	42.4%	40.6%	18.9%	17.9%	2.0%	8	3	16	0	6	12
QLD	Paroo (S)	Very remote	1927	1642	57.3%	51.7%	31.9%	29.7%	0.9%	17	4	19	0	6	12
QLD	South Burnett (R)	Inner Regional	29090	32186	38.0%	35.4%	13.7%	11.6%	18.4%	11	17	7	1	0	0
QLD	Southern Downs (R)	Inner Regional	31662	35115	39.7%	36.2%	15.7%	13.8%	35.3%	17	13	4	0	0	12
QLD	Toowoomba (R)	Inner Regional	142283	160779	35.4%	35.2%	7.2%	6.4%	23.4%	9	13	6	0	0	7
QLD	Western Downs (R)	Outer Regional	28406	33444	43.9%	37.7%	24.7%	19.3%	9.2%	17	13	7	1	0	1
SA	Adelaide Hills (DC)	Major cities	37860	38864	34.0%	35.3%	4.4%	3.8%	72.4%	6	11	13	4	0	7
SA	Alexandrina (DC)	Inner Regional	20713	25871	34.7%	34.6%	11.8%	8.8%	55.2%	9	10	9	3	0	7
SA	Barossa (DC)	Inner Regional	20550	23560	43.9%	40.0%	9.9%	6.8%	67.4%	6	13	12	4	1	7
SA	Berri and Barmera (DC)	Outer Regional	10935	10545	41.2%	37.7%	14.2%	11.5%	96.7%	13	3	6	0	0	4
SA	Goyder (DC)	Outer Regional	4181	4134	53.6%	50.4%	33.7%	32.5%	0.8%	11	11	6	1	2	7
SA	Karoonda East Murray (DC)	Outer Regional	1163	1088	70.9%	70.3%	53.5%	53.1%	10.4%	10	14	7	0	1	7
SA	Loxton Waikerie (DC)	Outer Regional	11607	11481	48.2%	46.3%	27.5%	23.9%	63.8%	12	18	7	0	0	7
SA	Mid Murray (DC)	Inner Regional	8039	8641	44.6%	38.1%	22.6%	18.7%	41.8%	11	14	7	1	1	7

STE	Local government area	Remote-ness	Total popu-lation, 2006	Total popul-ation, 2016	% employment in top 3 employing industries		% employment in agriculture, forestry and fishing industries		% agricul-tural businesses that irrigate part or all of their land	Total number of months in which LGA was in drought, using the definition of having six preceding months in which rainfall was significantly lower than the long-term average. *Data drawn from the Hutchinson Drought Severity Index. Note this is one amongst many measures of drought incidence.*					
					2006	2016	2006	2016		2001-2005	2006-2010	2011-2015	2016	2017	2018
SA	Mount Barker (DC)	Inner Regional	26435	33394	35.4%	34.0%	4.5%	3.5%	42.5%	6	17	11	4	0	7
SA	Murray Bridge (RC)	Inner Regional	17678	20862	43.2%	36.6%	9.2%	8.7%	35.5%	15	15	4	2	0	5
SA	Peterborough (DC)	Outer Regional	1904	1678	37.4%	38.5%	14.5%	13.8%	3.9%	11	13	4	0	2	4
SA	Renmark Paringa (DC)	Outer Regional	9452	9475	42.9%	40.5%	21.4%	19.0%	91.6%	18	7	4	0	1	4
SA	Southern Mallee (DC)	Remote	2138	2028	63.5%	64.3%	48.0%	48.6%	8.7%	10	20	13	2	0	7
SA	The Coorong (DC)	Outer Regional	5666	5386	56.8%	57.8%	39.9%	39.7%	12.1%	8	13	9	2	0	6
SA	Victor Harbor (C)	Inner Regional	12013	14661	39.0%	40.1%	6.2%	5.1%	15.7%	6	6	10	3	0	7
SA	Unincorporated SA	Very remote	3743	3524	45.4%	57.4%	23.6%	24.7%	16.2%	7	15	6	0	0	3
ACT	Unincorporated ACT	Major cities	323325	396853	48.6%	50.7%	0.3%	0.3%	14.1%	16	23	5	0	0	4

Appendix 5: Index of Basin local government areas

The map below numbers different LGAs, with Table A5 on the next page providing the name of the corresponding local government area.

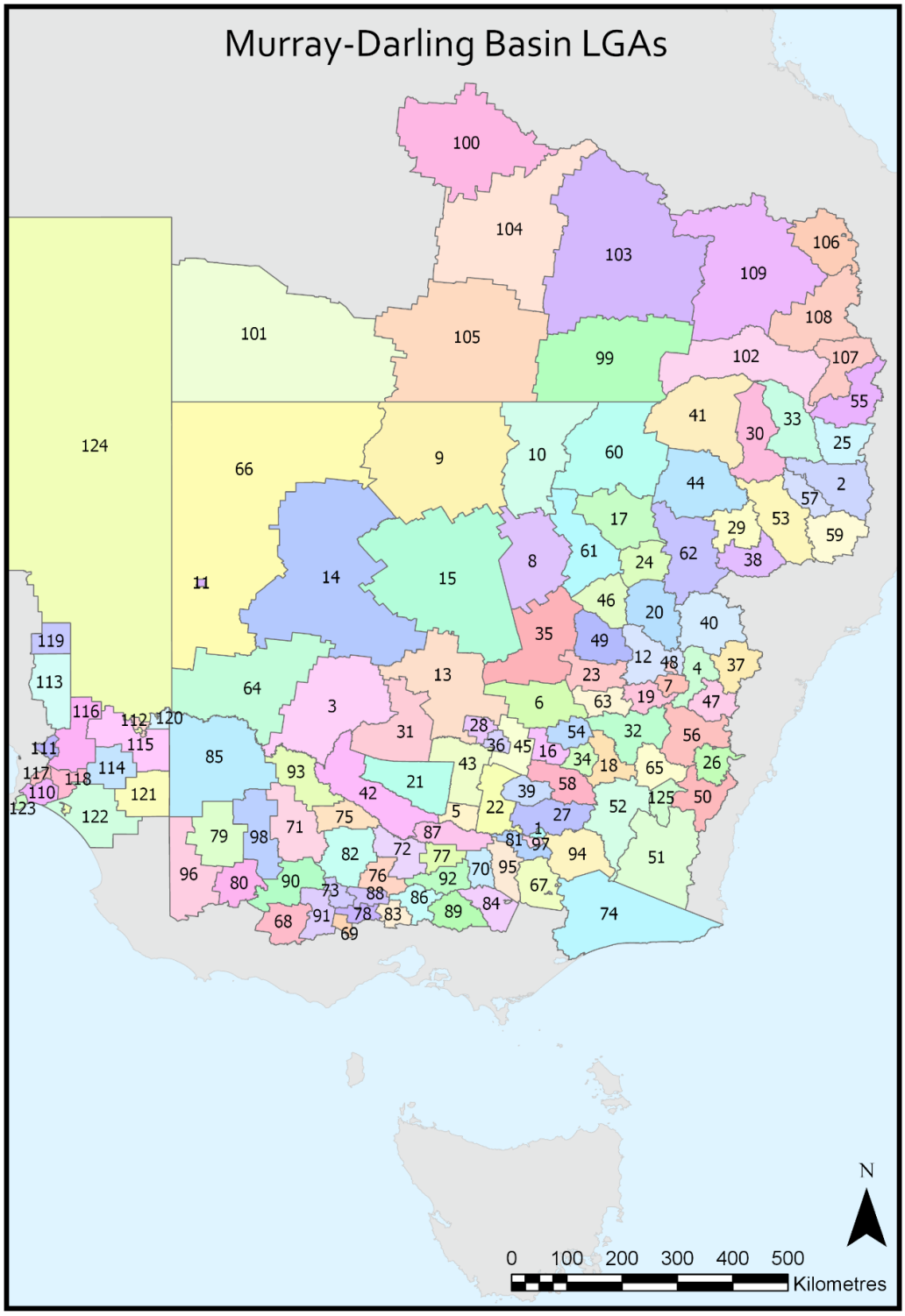

Figure A5 Index of Basin LGAs

Table A5 Index of Basin LGAs

LGA ID	LGA Name
1	Albury (C)
2	Armidale Regional (A)
3	Balranald (A)
4	Bathurst Regional (A)
5	Berrigan (A)
6	Bland (A)
7	Blayney (A)
8	Bogan (A)
9	Bourke (A)
10	Brewarrina (A)
11	Broken Hill (C)
12	Cabonne (A)
13	Carrathool (A)
14	Central Darling (A)
15	Cobar (A)
16	Coolamon (A)
17	Coonamble (A)
18	Cootamundra-Gundagai Regional (A)
19	Cowra (A)
20	Dubbo Regional (A)
21	Edward River (A)
22	Federation (A)
23	Forbes (A)
24	Gilgandra (A)
25	Glen Innes Severn (A)
26	Goulburn Mulwaree (A)
27	Greater Hume Shire (A)
28	Griffith (C)
29	Gunnedah (A)
30	Gwydir (A)
31	Hay (A)
32	Hilltops (A)
33	Inverell (A)
34	Junee (A)
35	Lachlan (A)
36	Leeton (A)
37	Lithgow (C)
38	Liverpool Plains (A)
39	Lockhart (A)
40	Mid-Western Regional (A)
41	Moree Plains (A)
42	Murray River (A)
43	Murrumbidgee (A)
44	Narrabri (A)
45	Narrandera (A)
46	Narromine (A)
47	Oberon (A)
48	Orange (C)
49	Parkes (A)
50	Queanbeyan-Palerang Regional (A)
51	Snowy Monaro Regional (A)
52	Snowy Valleys (A)
53	Tamworth Regional (A)
54	Temora (A)
55	Tenterfield (A)
56	Upper Lachlan Shire (A)
57	Uralla (A)
58	Wagga Wagga (C)
59	Walcha (A)
60	Walgett (A)
61	Warren (A)
62	Warrumbungle Shire (A)
63	Weddin (A)
64	Wentworth (A)
65	Yass Valley (A)
66	Unincorporated NSW
67	Alpine (S)
68	Ararat (RC)
69	Ballarat (C)
70	Benalla (RC)
71	Buloke (S)
72	Campaspe (S)
73	Central Goldfields (S)
74	East Gippsland (S)
75	Gannawarra (S)
76	Greater Bendigo (C)
77	Greater Shepparton (C)
78	Hepburn (S)
79	Hindmarsh (S)
80	Horsham (RC)
81	Indigo (S)
82	Loddon (S)
83	Macedon Ranges (S)
84	Mansfield (S)
85	Mildura (RC)
86	Mitchell (S)
87	Moira (S)
88	Mount Alexander (S)
89	Murrindindi (S)
90	Northern Grampians (S)
91	Pyrenees (S)
92	Strathbogie (S)
93	Swan Hill (RC)
94	Towong (S)
95	Wangaratta (RC)
96	West Wimmera (S)
97	Wodonga (C)
98	Yarriambiack (S)
99	Balonne (S)
100	Blackall-Tambo (R)
101	Bulloo (S)
102	Goondiwindi (R)
103	Maranoa (R)
104	Murweh (S)
105	Paroo (S)
106	South Burnett (R)
107	Southern Downs (R)
108	Toowoomba (R)
109	Western Downs (R)
110	Alexandrina (DC)
111	Barossa (DC)
112	Berri and Barmera (DC)
113	Goyder (DC)
114	Karoonda East Murray (DC)
115	Loxton Waikerie (DC)
116	Mid Murray (DC)
117	Mount Barker (DC)
118	Murray Bridge (RC)
119	Peterborough (DC)
120	Renmark Paringa (DC)
121	Southern Mallee (DC)
122	The Coorong (DC)
123	Victor Harbor (C)
124	Unincorporated SA
125	Unincorporated ACT

Appendix 6: Statistical test data

This Appendix provides the statistical test data used to assess whether differences between areas of (i) differing remoteness and (ii) in the Northern Basin, Southern Basin and outside the Basin, were statistically significant. The Kruskal Wallis H test was used to assess differences.

Ranks

	Remoteness	N	Mean Rank
Indicator 1: Change in total size of population, 2006-2016	1.00	134	378.27
	2.00	132	321.74
	3.00	146	197.19
	4.00	58	188.53
	5.00	74	207.53
	Total	544	
Indicator 2: Change in % population aged under 25, 2006-2016	1.00	134	140.28
	2.00	132	276.80
	3.00	146	316.16
	4.00	58	364.31
	5.00	74	346.15
	Total	544	
Indicator 3: Change in % population aged 65+, 2006-2016	1.00	134	165.32
	2.00	132	331.17
	3.00	146	345.60
	4.00	58	284.24
	5.00	74	208.51
	Total	544	
Indicator 4: Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017	1.00	134	94.72
	2.00	132	264.73
	3.00	146	330.13
	4.00	58	343.79
	5.00	73	437.26
	Total	543	

Test Statistics[a,b]

	Indicator 1: Change in total size of population, 2006-2016	Indicator 2: Change in % population aged under 25, 2006-2016	Indicator 3: Change in % population aged 65+, 2006-2016	Indicator 4: Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017
Kruskal-Wallis H	136.338	142.222	124.852	284.554
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

a. Kruskal Wallis Test
b. Grouping Variable: RemotenessCORRECT

Ranks

	Comparing Outside Basin, Northern Basin, Southern Basin	N	Mean Rank
Indicator 1: Change in total size of population, 2006-2016	1.00	37	51.81
	2.00	91	69.66
	Total	128	

Indicator 2: Change in % population aged under 25, 2006-2016	1.00	37	63.22
	2.00	91	65.02
	Total	128	
Indicator 3: Change in % population aged 65+, 2006-2016	1.00	37	64.81
	2.00	91	64.37
	Total	128	
Indicator 4: Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017	1.00	37	87.05
	2.00	91	55.33
	Total	128	

Test Statistics[a,b]

	Indicator 1: Change in total size of population, 2006-2016	Indicator 2: Change in % population aged under 25, 2006-2016	Indicator 3: Change in % population aged 65+, 2006-2016	Indicator 4: Average of potential years of life lost due to treatable or avoidable conditions for those aged 75 or under, 2013-2017
Kruskal-Wallis H	6.090	.062	.004	19.240
df	1	1	1	1
Asymp. Sig.	.014	.803	.952	.000

a. Kruskal Wallis Test

b. Grouping Variable: NorthBasin1SouthBasin2OutBasin0

Ranks

NorthBasin1SouthBasin2OutBasin0		RemotenessCORRECT	N	Mean Rank
.00	**Services and infrastructure**	1.00	129	187.89
		2.00	78	269.10
		3.00	93	233.48
		4.00	50	197.94
		5.00	66	149.98
		Total	416	
	Access to general health services	1.00	128	182.63
		2.00	76	204.58
		3.00	87	187.43
		4.00	40	162.78
		5.00	36	160.72
		Total	367	
	Quality of local schools	1.00	128	175.21
		2.00	76	224.95
		3.00	87	188.76
		4.00	40	152.31
		5.00	36	152.47
		Total	367	
	Local government services	1.00	128	170.53
		2.00	76	172.53
		3.00	87	210.62
		4.00	40	218.30
		5.00	36	153.67
		Total	367	
	Professional services	1.00	128	205.52
		2.00	76	187.82
		3.00	87	172.33
		4.00	40	147.75
		5.00	36	167.89
		Total	367	
	Mobile phone reception	1.00	128	179.07

		2.00	76	180.93
		3.00	87	191.45
		4.00	40	193.38
		5.00	36	179.58
		Total	367	
	High speed, reliable internet	1.00	128	182.13
		2.00	76	186.06
		3.00	87	192.30
		4.00	40	184.04
		5.00	36	166.19
		Total	367	
1.00	**Services and infrastructure**	2.00	8	27.81
		3.00	17	20.85
		4.00	6	5.25
		5.00	6	15.75
		Total	37	
	Access to general health services	2.00	8	22.75
		3.00	17	16.00
		4.00	6	15.50
		5.00	6	26.00
		Total	37	
	Quality of local schools	2.00	8	22.75
		3.00	17	19.97
		4.00	6	8.75
		5.00	6	21.50
		Total	37	
	Local government services	2.00	8	27.00
		3.00	17	17.79
		4.00	6	14.00
		5.00	6	16.75
		Total	37	
	Professional services	2.00	8	29.00
		3.00	17	19.59
		4.00	6	6.00
		5.00	6	17.00
		Total	37	
	Mobile phone reception	2.00	8	26.56
		3.00	17	14.50
		4.00	6	14.50
		5.00	6	26.17
		Total	37	
	High speed, reliable internet	2.00	8	27.63
		3.00	17	18.15
		4.00	6	13.00
		5.00	6	15.92
		Total	37	
2.00	**Services and infrastructure**	1.00	5	33.60
		2.00	46	56.73
		3.00	36	37.21
		4.00	2	30.50
		5.00	2	4.00
		Total	91	
	Access to general health services	1.00	5	34.60
		2.00	46	58.39
		3.00	36	33.33
		4.00	2	46.00
		5.00	2	17.50
		Total	91	

Quality of local schools	1.00	5	39.60
	2.00	46	54.60
	3.00	36	39.33
	4.00	2	22.75
	5.00	2	7.50
	Total	91	
Local government services	1.00	5	31.00
	2.00	46	46.36
	3.00	36	49.71
	4.00	2	44.50
	5.00	2	10.00
	Total	91	
Professional services	1.00	5	32.60
	2.00	46	55.28
	3.00	36	39.44
	4.00	2	15.00
	5.00	2	15.00
	Total	91	
Mobile phone reception	1.00	5	42.40
	2.00	46	53.70
	3.00	36	39.06
	4.00	2	33.00
	5.00	2	16.00
	Total	91	
High speed, reliable internet	1.00	5	46.10
	2.00	46	49.57
	3.00	36	41.68
	4.00	2	69.50
	5.00	2	18.00
	Total	91	

Test Statistics[a,b]

NorthBasin1SouthBasin2OutBasin0		Services and infrastructure	Access to general health services	Quality of local schools	Local government services	Professional services	Mobile phone reception	High speed, reliable internet
.00	Kruskal-Wallis H	43.665	9.832	30.184	22.992	15.164	1.569	2.169
	df	4	4	4	4	4	4	4
	Asymp. Sig.	.000	.043	.000	.000	.004	.814	.705
1.00	Kruskal-Wallis H	16.046	7.913	7.815	10.094	20.631	18.765	11.181
	df	3	3	3	3	3	3	3
	Asymp. Sig.	.001	.048	.050	.018	.000	.000	.011
2.00	Kruskal-Wallis H	18.434	24.627	16.114	7.463	16.578	10.888	6.603
	df	4	4	4	4	4	4	4
	Asymp. Sig.	.001	.000	.003	.113	.002	.028	.158

a. Kruskal Wallis Test
b. Grouping Variable: RemotenessCORRECT

Kruskal-Wallis Test

Ranks

	NorthBasin1SouthBasin2OutBasin0	N	Mean Rank
Services and infrastructure	1.00	37	35.58
	2.00	91	76.26
	Total	128	
Access to general health services	1.00	37	50.64
	2.00	91	70.14
	Total	128	

Quality of local schools	1.00	37	65.51
	2.00	91	64.09
	Total	128	
Local government services	1.00	37	41.72
	2.00	91	73.76
	Total	128	
Professional services	1.00	37	56.88
	2.00	91	67.60
	Total	128	
Mobile phone reception	1.00	37	44.39
	2.00	91	72.68
	Total	128	
High speed, reliable internet	1.00	37	50.18
	2.00	91	70.32
	Total	128	

Test Statistics[a,b]

	Services and infrastructure	Access to general health services	Quality of local schools	Local government services	Professional services	Mobile phone reception	High speed, reliable internet
Kruskal-Wallis H	31.643	8.466	.046	22.790	2.486	17.907	9.298
df	1	1	1	1	1	1	1
Asymp. Sig.	.000	.004	.830	.000	.115	.000	.002

a. Kruskal Wallis Test

b. Grouping Variable: NorthBasin1SouthBasin2OutBasin0