SGS
Economics
& Planning

NSW SPATIAL LABOUR PATTERNS

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EXECUTIVE SUMMARY

SGS Economics and Planning (SGS) has been commissioned by Infrastructure NSW and Jobs NSW to analyse the spatial location of jobs and labour participation patterns and constraints in key locations in Sydney and Regional NSW.

The focus of this project has been identifying any unique challenges and insights that support improving access to labour for businesses and access to jobs for residents.

The initial context mapping and workshop with state government agencies identified seven regions for further analysis:

1. Northern Rivers (Tweed)
2. Mid-north coast (Port Macquarie/Coffs Harbour)
3. New England (Armidale/Tamworth/Gunnedah)
4. Central West (Dubbo, Bathurst, Orange)
5. South West Sydney (Fairfield, Liverpool and Cumberland)
6. Shoalhaven and South Coast (Nowra, Batemans Bay and Bega)
7. Riverina/Murray (Wagga Wagga/Griffith/Albury) HG/LJH.

A number of indicators have been mapped across NSW including population and employment growth, access to employment and centres, education attainment, employment vulnerability and disadvantage, rental housing affordability, participation in the workforce among key demographic groups including, youth and females, and access to technology.

The Northern Rivers, Mid-North Coast and Shoalhaven and South Coast have an ageing population and growing the working age

population is a significant issue. New England, Central West and Riverina-Murray need to attract more workers and employment opportunities. South West Sydney is one of the most disadvantaged areas in NSW and poor accessibility to education and employment opportunities is a major barrier to greater labour force participation.

Across the seven regions, four main opportunities have been identified:

- Increase job opportunities where these are deficient.
- Remove barriers to workforce entry for local residents including increasing education attainment and skill levels.
- Improve accessibility to employment centres (for Sydney) or accessibility to the region to attract more workers, to increase the relative availability of jobs to local residents and foster business to business connections.
- Develop pathways to business expansion for appropriately skilled labour to capture more local expenditure and expand job opportunities for local residents.

The level of government support or intervention required will depend on whether the potential of the existing resident population needs to be further unlocked e.g. increasing participation, or whether fundamental change is required e.g. increasing education attainment levels and access to employment.

Economic development initiatives should be tailored to the local region. The NSW Government should consider the existing endowments and industries of specialisation within each of the regions and build on these through investment.

The strong nexus between the relative regional industry strengths and the capacity of the local labour force needs to be recognised.

For example, in locations where there is a significant ageing population, investing in health and well-being to underpin productivity and the contribution that human capital can make to the local economy, will be important. Prospects to deepen the economy of some of these 'lifestyle' regions may be limited so the effort should be focussed on developing excellence in the sectors which are population dependent such as health.

For regions which rely on nature-based tourism, protecting and indeed nurturing the natural environment will be important to the long term sustainability of the regional economy. Investment in environmental care and restoration shouldn't be seen as 'make work' schemes but rather as investment in the fundamental 'infrastructure' of regions (albeit natural rather than man-made infrastructure).

Transitioning labour into new opportunities such as renewable energy development and generation, and resource recovery and recycling, should also be a focus in regions affected by structural economic change.

In a future where technology will continue to disrupt and replace traditional employment, the need for such targeted government intervention to sustain the economic base and livelihood of regions will increase. This report is intended to contribute early thinking on the nature of such interventions.

The focus of the analysis is labour force patterns and issues. The report presents broad opportunities related to labour force development across seven regions in NSW. It will be important to draw on this analysis within the Regional Economic Development Strategies currently being prepared by Infrastructure NSW to ensure that there is a clear link between economic development and prospects for the local labour force.

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1. INTRODUCTION

This section of the report establishes the context of this study including the objectives of the report and the existing research undertaken by various government agencies to date.

1.1   Study purpose

SGS Economics and Planning (SGS) has been commissioned by Infrastructure NSW and Jobs NSW to analyse the spatial location of jobs and labour participation patterns and constraints in key locations in Sydney and Regional NSW.

The project will inform the developing State Infrastructure Strategy, Future Transport and Sydney Regional Strategy. Each of these plans have objectives to activate jobs to create more self-reliant regional economies.

The focus is better understanding spatial labour participation patterns in key areas of Sydney and Regional NSW.

It will identify unique challenges and possible insights that support:

- improving access to labour for businesses, and
- access to jobs for residents.

This project has involved collating and presenting existing information through a suite of maps and interpreting the mapping to identify the spatial locations of labour participation patterns, including constraints in key locations in Sydney and Regional NSW.

1.2   Report

This report is structured as follows:

- Section 2 details the process undertaken including the regions identified and indicators adopted to understand labour participation patterns
- Sections 3 to 9 report the insights identified for each of the regions which were mapped
- Appendix: Summary of Indicators.
- Attachment: Indicator mapping.

1.3   Existing research

This report draws on existing research in this area including:

- *Regional Economic Growth Enablers* (Centre for Economic and Regional Development)
- *Jobs for the Future* (Jobs for NSW)
- *Regional Economic Development Framework* (Department of Industry)
- *Regional Plans* (Department of Planning and Environment).

Section 3 to 9 of this report draw out the key industry sectors identified for some of the regions from the *Regional Economic Growth Enablers* report.

Jobs for the Future identified four focus areas (refer to Figure 1):

1. Nurture our globally competitive growth segments
2. Open doors for entrepreneurs
3. Skill up for the knowledge economy
4. Draw on all of our people.

The last two strategies are particularly relevant to this study and have informed the selection of indicators which are discussed in section 2.3 of this report including participation in the workforce across various demographic groups. This report provides a further level of detail regarding some of these issues at the regional level.

This report also builds on the *Regional Development Framework* which discussed models for investment to activate local economies, with a focus on non-metropolitan economies.

The centres identified within the regional plans across NSW and the District plans in Greater Sydney are reflected in the mapping prepared as part of this study.

FIGURE 1: JOBS FOR NSW FOUR STRATEGIES FOR FUTURE JOBS GROWTH

1. Nurture our globally competitive growth segments
Nurture high-quality jobs in globally competitive, tradeable segments—with geographic clusters and policy reform to overcome their barriers to growth

2. Open doors for entrepreneurs
Make NSW the place of choice for 'gazelles' to grow and succeed—by building a stronger entrepreneurial culture, ecosystems and skills and stimulating early-stage funding
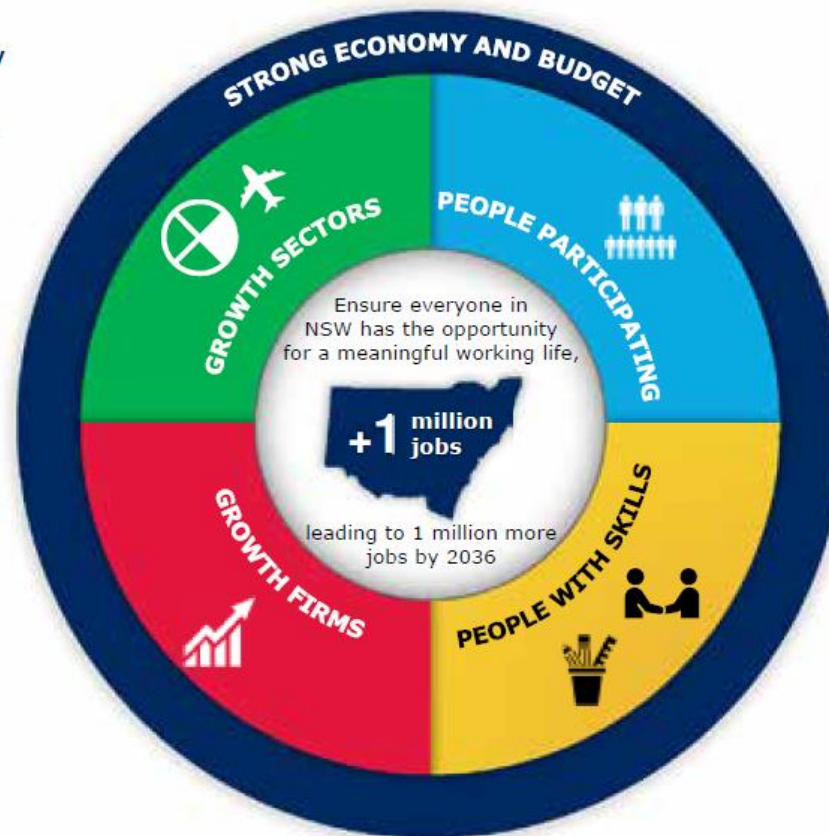
4. Draw on all of our people
Make NSW the best state for people to enjoy paid work—by ensuring good livability across NSW and removing barriers for people 65 and over, women with children, and regional youth

3. Skill up for the knowledge economy
Ensure people of all ages have the interactive skills they need for the digital future—by supporting the integration of those skills in schools and a responsive, outcomes-based VET system

STRONG ECONOMY AND BUDGET
GROWTH SECTORS
PEOPLE PARTICIPATING
Ensure everyone in NSW has the opportunity for a meaningful working life,
+1 million jobs
leading to 1 million more jobs by 2036
GROWTH FIRMS
PEOPLE WITH SKILLS

Source: Jobs for NSW, 2016

2. REGIONS AND INDICATORS

This section of the report provides an overview of the process undertaken to identify the regions for further analysis and the indicators adopted for each of the seven focus regions.

2.1   Context mapping

Five indicators were mapped at a local government area (LGA) level across NSW to assist in identifying the locations for more detailed analysis. This mapping informed a workshop discussion. The indicators were:

- Population change (1996-2016-2036) to highlight high growth and low growth locations
- Employment change (1996-2016-2036) to highlight high growth and low growth locations
- Unemployment rates to highlight areas with high unemployment rates (>5%)
- Jobs to housing (or workers) ratio to understand gap between the working age population and number of local jobs (consistent with Regional Economic Growth Enablers report)
- Dependency ratio (Ratio of working age (15-64 years) to non-working age (<15; >64 years)).

The LGAs were then reviewed to understand which locations had high population growth, high unemployment, a high dependency ratio or a low jobs to housing ratio. These classifications were considered to be an appropriate overlay to identify the regions

where access to labour for businesses or access to jobs for residents are potentially issues.

2.2   Regions for further analysis

The regions have been identified based on the stage 1 mapping, and input from workshop attendees on economic trends, the current and planned infrastructure context.

Seven regions were selected for further analysis (based on LGA boundaries):

1. Northern Rivers (Tweed) HG/HD/LJH
2. Mid-north coast (Port Macquarie/Coffs Harbour) HG/HD
3. New England (Armidale/Tamworth/Gunnedah) HG/HU/LJH
4. Central West (Dubbo, Bathurst, Orange) HG/LJH
5. South West Sydney (Fairfield, Liverpool and Cumberland) HG/HU
6. Shoalhaven and South Coast (Nowra, Batemans Bay and Bega) HG/HU/HD
7. Riverina/Murray (Wagga Wagga/Griffith/Albury) HG/LJH.

Note: HG: high growth; HU: high unemployment; HD: high dependency; LJH: low jobs to housing.

These regions are illustrated in Figure 2.

FIGURE 2: REGIONS FOR FURTHER ANALYSIS
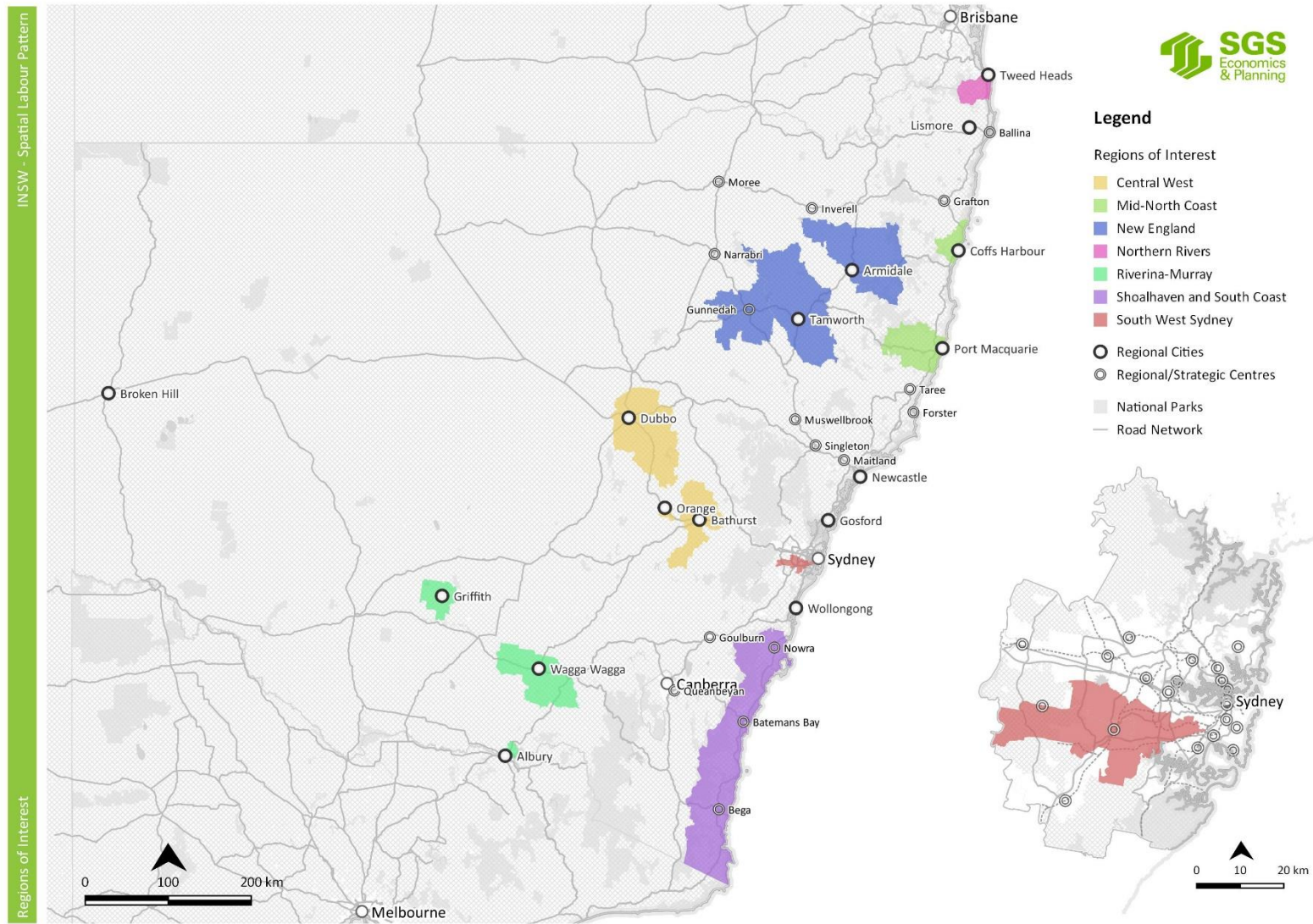
Source: SGS Economics and Planning, 2017

2.3   The indicators

The focus of this study is barriers and issues for the labour force. The indicators adopted are specific to potential labour force issues rather than the broader impacts of changing industry operations or market conditions.

The following indicators have been mapped across NSW:

- Current population
- Access to employment (Effective Job Density)
- Access to regional cities and district centres
- Educational attainment (tertiary level) higher education and vocational education (VET).
- Employment vulnerability (risk of decline of local industry)
- Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD)
- Affordability of rental housing
- Youth participation in workforce
- Female participation in the workforce
- Potential underutilisation measured by the proportion of the workforce who work part-time
- Access to technology/ICT infrastructure using the Digital Inclusion Index (DII).

More detail on the data sources and units of measurement for these indicators is provided in the Appendix.

Please note, the DII is released for broad regions which do not align with the NSW Government definitions. There is some overlap between the regions discussed in this report.

This report focuses on the insights from the mapping of these indicators for each of the seven regions selected. The discussion focuses on where a region performs above or below the relative benchmark or average observed across NSW.

2.4   Other issues

Additional regions

Additional regions were discussed, including Newcastle, Wollongong, Parkes and Greater Parramatta to Olympic Peninsula (GPOP). While it is acknowledged that these locations are expected to experience significant growth and change over the next 20 years, they were not included in this study due to a number of reasons i.e.:

- Newcastle; significant research underway at LGA level; city in transition; significant planned government investment
- Wollongong: significant research underway at LGA level
- Parkes: further inland rail, potential connections to Dubbo; longer term issues
- GPOP (Westmead/Parramatta): Greater Sydney Commission (GSC) undertaking significant research/policy work across GPOP.

Additionally, project timing and resource constraints have required the focus to be restricted to the seven regions listed above.

Data limitations

The timing of this project does not allow for the inclusion of the 2016 Census data. Data collected through the 2016 Australian Bureau of Statistics (ABS) Census of Population and Housing is being released in phases throughout 2017. Basic community profiles will be available from 27 June with additional data packs being released in early July. The ABS has announced that the employment and qualification data (which is most relevant to this study) will be released in October 2017. Upon the release of the 2016 Census data, an update to this study would be beneficial to qualify the continued relevance of the issues identified throughout this report. This would assist in building the time series of historical data and also better understand recent migration patterns.

Additional indicators

A number of other indicators were discussed at the workshop. These could be mapped in the future, however given data availability, and timing, are out of the scope of this work:

- Access to tertiary institutions: indicator of access to opportunity, requires additional data to identify assets, and users (distance learning)
- Social networks: requires additional data not available in timeframe
- Size of firms: industry related, focus of this data is on labour
- Migration and movement patterns (available data considered out of date; could up updated with 2016 Census releases)
- Jobs by industry (covered by the Regional Economic Growth Enablers report)
- Indigenous population.
- Migration patterns using 2016 Census data.
- Historical trends using 2016 Census data.

3. NORTHERN RIVERS

Tweed has experienced high population growth, has a high dependency ratio and a low jobs to housing ratio. There is a need to understand how access to labour for businesses can be improved.

The region

Tweed is the northern-most LGA in NSW and is located on the Queensland (Qld) border. The *draft North Coast Regional Plan* identifies a focus on interconnected communities, highlighting the twin towns of Gold Coast and Tweed Heads which are contiguous (across the border) and have strong economic links.

In 2016, there were 94,000 residents in Tweed LGA. The population grew by 45% between 1996 and 2016. As of 2011, there were 23,000 jobs in Tweed LGA, representing growth of 4% between 2006 and 2011. This highlights that population growth is far outpacing local jobs growth.

Tweed is located 100 kilometres (km) from Brisbane (1.5 hours' drive) and 800 km from Sydney (9.5 hours' drive). The centre, and broader LGA, therefore have much stronger links with Brisbane (and South East Qld) compared to Sydney. The closest airport is located 10 minutes' drive from Tweed Heads, at Coolangatta on the Gold Coast.

Tourism is a significant industry for Tweed and is expected to continue to drive economic growth for the local economy. The LGA is also located one hour away from Byron Bay which is another iconic tourist destination in the Northern Rivers.

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Accommodation
- Vocational education
- Higher education
- Medical and other health care services

Principal industry sectors to drive growth:

1. Tourism
2. Aged care
3. Health care

Insights

The following trends can be observed across the mapping:

- There are fewer jobs relative to residents which is reflected in the high dependency ratio. Residents also travel outside the LGA (and State) for work, including to the Gold Coast and Brisbane. The proximity of work opportunities 'across the border' suggests the statistically noticeable high dependency ratio is not a true reflection of the situation for the labour force.
- Low higher education (tertiary level) qualifications.
- Tweed Heads is considered to have a high (red alert) employment vulnerability risk, this means that workers are vulnerable to unemployment if there was a decline in local industry (again, keeping in mind greater employment depth over the border in South East Qld). Refer to Appendix for further detail.

- Tweed Heads contains a significant concentration of disadvantaged households.
- Rental housing is moderately unaffordable, however is more affordable than Byron and Gold Coast.
- Female participation in the workforce is marginally lower than male participation. However, the gap is lower than the NSW state average.
- There is a high proportion of residents aged 65 to 75 years who would be supporting the labour force through volunteering, 'importing' money (having liquidated assets from elsewhere prior to moving to the region) and making new investments in the region.
- Significantly high proportion of part time workers in the workforce which potentially indicates underutilisation of local labour.
- DII for North East NSW (49.7) is lower than NSW (54.9) and Australian average (54.5). Access, affordability and digital ability all scored lower in North East NSW compared to NSW and Australia. Digital ability is the area of greatest difference. The DII has improved between 2014 and 2016.

Opportunities

Improving access to labour for businesses should be a priority for the Northern Rivers to support the growing ageing population and enhance its economic potential. Two main opportunities to deepen and broaden the labour 'footprint' are identified below.

1. Remove barriers to workforce entry for local residents.

Removing barriers could facilitate and increase in the size of local workforce and help to reduce unemployment. This could include skilling up the workforce in aged care and health care industries to support the growing ageing population. Skilling up may also help to address concentrations of disadvantage reflected in the SEIFA scores.

Barriers to female participation in the workforce should be investigated further.

2. Improve accessibility to the region.

Accessibility to the region could be improved particularly to Brisbane and the Gold Coast which will expand EJD for the region as well as access to labour. A fast train connection to Brisbane would significantly improve accessibility. Extending the Gold Coast train to Tweed is another opportunity that would improve access. Improving accessibility to Northern Rivers has the potential to attract more workers, increase the relative availability of jobs to local residents and also foster business to business connections.

4. MID-NORTH COAST

The Mid-North Coast has experienced high population growth and has a high dependency ratio. There is a need to understand how access to labour for businesses can be improved.

The region

Coffs Harbour and Port Macquarie are two major regional cities located on the mid-north coast of NSW. Coffs Harbour and Port Macquarie-Hastings are two of the three fastest growing LGAs within the North Coast region of NSW (the third being Tweed).

In 2016, there were 155,000 residents living across the two LGAs. Between 1996 and 2016, the population of Coffs Harbour LGA grew by almost 30% and the population of Port Macquarie-Hastings grew by almost 40%. As of 2011, there were 49,000 jobs across these two LGAs. Between 2006 and 2011, jobs growth was greatest in Coffs Harbour (7%), compared to Port Macquarie-Hastings (4%).

Port Macquarie is located 380 km from Sydney (4 hours' drive) and Coffs Harbour is 530 km from Sydney (6 hours' drive). Coffs Harbour is closer to Brisbane at 390 km away (4.5 hours' drive).

Both regional cities have regional airports which have direct flights to Sydney and Melbourne. Port Macquarie also has direct flights to Brisbane.

Domestic tourism is expected to continue to underpin economic growth in the region and aged care will continue to be a growing sector associated with the significant ageing population being attracted to these two regional cities.

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Sheep, beef cattle and grain farming (P)
- Fruit and nut tree growing (C)
- Accommodation (C,P)
- Vocational education (C,P)
- Hospitals (C)
- Medical and other health care services (C,P)
- Residential care services (C,P)

Principal industry sectors to drive growth:

Coffs Harbour

1. Health care
2. Aged care
3. Tourism
4. Fruit and nut growing

Port Macquarie

1. Tourism
2. Health care
3. Aged care

Insights

The following trends can be observed across the mapping:

- Growing but ageing population with retirees attracted to the coast (sea change). Population density is higher than most other regional areas.
- High dependency ratio, particularly Port Macquarie which has one of the highest dependency ratios in the state.
- Low higher education attainment levels.
- Medium risk in terms of employment vulnerability with Port Macquarie centre being medium to low risk.
- Concentration of disadvantage across Coffs Harbour. Port Macquarie has a diverse spectrum with a concentration of disadvantage in the west and some of the least disadvantaged areas on the coast near Lighthouse Beach in Port Macquarie.
- Rental housing is moderately unaffordable.
- Youth unemployment is around or slightly higher than the NSW state average.
- Female participation in the workforce is lower than male participation. However, the gap is lower than the NSW state average.
- Significant proportion of population aged 65-75 years who are likely supporting the labour force.
- High proportion of part time workers in the workforce which potentially indicates underutilisation of local labour.
- DII for North East NSW (49.7) is lower than NSW (54.9) and Australian average (54.5). Access, affordability and digital ability all scored lower in North East NSW compared to NSW and Australia. Digital ability is the area of greatest difference. The DII has improved between 2014 and 2016.

Opportunities

A virtuous recycling of the available income and expenditure in the key economic sectors, and thereby containing the value chain, is important in the regions such as the Mid-North Coast which are more remote from capital city economies. Improving access to labour for businesses should also be a priority to support the growing ageing population and enhance its economic potential. Two main opportunities to address these respective aims are identified below.

1. Develop pathways to business expansion.

Developing pathways to business expansion for appropriately skilled labour will help to capture more local expenditure and expand job opportunities for local residents.

This will help to support the principal industry sectors particularly health care, aged care and tourism. In particular, tourism is an industry where local labour can be supported through business advisory services which improve management skills and the development of small businesses operating in this sector to take advantage of incoming expenditure.

2. Remove barriers to workforce entry for local residents.

This includes ensuring that the existing population is adequately skilled in growing industries of employment. In particular, aged and health care will be growing industries of employment due to the significant ageing population. This will help to reduce employment vulnerability risk.

Barriers to female participation in the workforce should be investigated further.

5. NEW ENGLAND

New England has experienced high population growth, has a high unemployment rate and a low jobs to housing ratio. There is a need to understand how access to jobs for residents can be improved.

The region

New England is an inland area located in northern NSW which includes three major regional centres: Armidale, Tamworth and Gunnedah. It forms part of the wider New England North West region of NSW.

In 2016, there were 100,000 residents living across the three LGAs (Armidale Dumaresq, Tamworth Regional and Gunnedah). Between 1996 and 2016, the population of Tamworth grew much stronger (16%), compared to Armidale Dumaresq (7%). Gunnedah experienced a small decline in its population (-1%) over the same period. As of 2011, there were 37,000 jobs across this region with the majority of jobs concentrated in Tamworth. Between 2006 and 2011, jobs growth was greatest in Gunnedah (11%), compared to Tamworth (2%). Armidale experienced a small decline in jobs (-1%) over this same period.

Both Armidale and Tamworth have regional airports which have direct connections to Sydney and Brisbane. Tamworth is geographically closer to Sydney than Brisbane. It is located approximately 400 km from Sydney (5 hours' drive) and 580 km from Brisbane (7 hours' drive). Armidale is roughly equidistant to Brisbane and Sydney (5.5 hour's drive).

The University of New England has campuses in both Armidale and Tamworth and the University of Newcastle has a campus in Tamworth.

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Sheep, beef cattle and grain farming (A,T)
- Food product manufacturing (T)
- Road freight transport (T)
- Accommodation (A)
- Vocational education (A,T)
- Higher education (A)
- Hospitals (T)

Principal industry sectors to drive growth:

Armidale

1. Higher education
2. Agriculture

Tamworth

1. Agriculture
2. Food product manufacturing
3. Road freight transport

Insights

The following trends can be observed across the mapping:

- The region does not have a significant ageing population compared to the coastal areas of NSW. Retaining educated youth is likely to be a more significant issue as well as the continued pull of the sea change. These trends will impact population growth in the future.
- Diversity of higher education attainment levels. Armidale has a higher concentration of residents with higher education qualifications (above NSW average). Tamworth has a higher concentration of residents with VET qualifications.
- Lack of data on employment vulnerability. Armidale is considered to be medium low risk. Ongoing vulnerability will be impacted by evolution of technology in agriculture.
- Disadvantage is concentrated in the town centres with the more regional areas the least disadvantaged.
- Rental housing is very affordable.
- Youth unemployment levels vary across the region with the youth unemployment rate higher than the NSW average in Armidale and parts of Tamworth.
- Female participation in the workforce is lower than male participation. The gap is particularly high in some outer areas of Tamworth and Gunnedah.
- Proportion of part time workers in the workforce varies across the region. It is particularly high in Armidale which potentially indicators underutilisation of local labour.
- DII for North East NSW (49.7) is lower than NSW (54.9) and Australian average (54.5). Access, affordability and digital ability all scored lower in North East NSW compared to NSW and Australia. Digital ability is the area of greatest difference. The DII has improved between 2014 and 2016.

Opportunities

Improving access to labour for businesses and access to jobs for residents should both be priorities to ensure the long term sustainability of the New England labour force. Capturing a greater share of the available income generated by the key economic sectors, for investment and spending in the region, is also important. Three main opportunities to address this have been identified.

1. Remove barriers to workforce entry for local residents.

Improving education and skills will provide greater opportunities for existing residents. The qualifications and skills of residents should match the growing industries of employment.

VET should focus on relevant industries of specialisation including agriculture and manufacturing. Education should respond to advances in technology which impact the skills required to undertake work.

Encouraging links between the existing universities and business may promote better translation of education into skills.

2. Improve accessibility to the region.

The airports at Tamworth and Armidale will be increasingly important given the long travel times via road to Sydney and Brisbane. The proposed inland rail is expected to bypass these cities and may impact potential employment growth. The ageing population will be increasingly attracted to the coast.

Improving accessibility will be important for retaining the existing labour force and expanding the local workforce by attracting workers to the region. In the longer term, growing the working age population will be important for the long term sustainability of the local labour force.

3. Develop pathways to business expansion.

Developing pathways to business expansion for appropriately skilled labour will help to capture more local expenditure and expand job opportunities for local residents. This will help to support the principal industry sectors particularly agriculture and food product manufacturing. Reducing the reliance on seasonal workers from outside the region will assist in reducing income leakage.

6. CENTRAL WEST

The Central West has experienced population growth and has a low jobs to worker ratio. The dependency ratio is increasing. Improving access to labour for businesses, and access to jobs for residents are both important in this region.

The region

The Central West region is located at the centre of NSW and contains three major regional cities: Dubbo, Orange and Bathurst. These centres will accommodate the majority of population growth across the broader Central West and Orana region over the next 20 years.

The focus of this analysis is the three LGAs: Dubbo, Orange and Bathurst Regional. In 2016, 126,000 residents lived across these LGAs. Between 1996 and 2016, the population in Dubbo grew by 15% which is lower compared to Orange (19%) and Bathurst (26%). As of 2011, there were 50,000 jobs across the region. Between 2006 and 2011, there was only marginal jobs growth across the three LGAs: Dubbo (1%), Orange (3%), and Bathurst (2%).

Bathurst and Orange are located relatively close to Sydney. Bathurst is 200 km (2.5 hours' drive) and Orange is 250 km to Sydney (3.25 hours' drive). Dubbo is 400 km from Sydney (5 hours' drive). Dubbo has a regional airport which has direct flights to Sydney, Brisbane, Melbourne, Canberra and Newcastle.

The region has a diverse economy with agriculture and manufacturing being the primary export industries.

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Sheep, beef cattle and grain farming (D,O,B)
- Food product manufacturing (DB)
- Wood product manufacturing (B)
- Road freight transport (D)
- Accommodation (D,B)
- Vocational education (D,O)
- Higher education (B)
- Hospitals (D,O)
- Medical and other health care services (O)
- Residential care services (D,O)

Insights

The following trends can be observed across the mapping:

- High population growth and a growing dependency ratio which suggests that the population will continue to age.
- Low higher education attainment levels with high VET attainment.
- Medium high employment vulnerability risk.
- Diverse levels of disadvantage. Within the centres there are highly disadvantaged areas, particularly where public housing is concentrated.
- Rental housing affordability is acceptable.
- Youth unemployment rates are generally consistent with the NSW state average. Bathurst has a high youth unemployment rate.

- Female participation in the workforce is lower than male participation, particularly in Orange and Dubbo where the gap is higher than the NSW state average.
- Proportion of part time workers in the workforce varies across the region. It is particularly high in Bathurst which potentially indicates underutilisation of local labour.
- DII for North West NSW (48.8) is lower than NSW (54.9) and Australian average (54.5). Access, affordability and digital ability all scored lower in North West NSW compared to NSW and Australia. The most significant difference is digital ability The DII has improved between 2014 and 2016.

REGIONAL ECONOMIC GROWTH ENABLERS

Principal industry sectors to drive growth:

Dubbo

1. Agriculture
2. Food product manufacturing
3. Road freight transport
4. Tourism

Orange

1. Mining
2. Health care
3. Agriculture
4. Road freight transport

Bathurst

1. Agriculture
2. Food product manufacturing
3. Wood product manufacturing
4. Higher education

Opportunities

Improving access to labour for businesses and access to jobs for residents should both be priorities to ensure the long term sustainability of the Central West labour force.

A virtuous recycling of the available income and expenditure in the key economic sectors, and thereby containing the value chain, is important in regions such as the Central West which are more remote from capital city economies.

Two main opportunities to address these respective aims are identified below:

1. Remove barriers to workforce entry for local residents.

Promote education opportunities (particularly TAFE) for local residents with a focus on industries of specialisation and growth such as agriculture and manufacturing. Workers should be skilled in response to the changing economic environment, particularly with changes to technology which impact agriculture and manufacturing, as well as mining. This will help to address employment vulnerability risk.

Increasing female participation is an opportunity to expand the labour force. Barriers preventing this should be further investigated.

2. Develop pathways to business expansion.

Developing pathways to business expansion for appropriately skilled labour will help to capture more local expenditure and expand job opportunities for local residents.

This will help to support the principal industry sectors particularly agriculture, food product manufacturing, tourism and health care. Reducing the reliance on seasonal workers from outside the region in agriculture and food product manufacturing will assist in reducing income leakage. Business advisory services will likely assist in developing expansion potential for tourism operators.

7. SOUTH WEST SYDNEY

South West Sydney has experienced a significant amount of population growth over the last two decades. It has one of the highest unemployment rates in NSW. Accessibility to jobs for residents is a priority for this area.

The region

For the purpose of this study, South West Sydney comprises three LGAs: Fairfield, Liverpool and Cumberland (merger of Holroyd, Auburn and parts of Parramatta LGAs).

As of 2016, 615,000 residents lived in this region[1]. Between 1996 and 2016, the most significant residential growth was experienced in Liverpool and former Auburn LGA (70%). Over the same period, the residential population of Holroyd grew by 30% and Fairfield grew by 9%. As of 2011, there were 176,000 jobs in this region, spread across Liverpool, Auburn and Fairfield with a lower proportion of jobs in Holroyd. Between 2006 and 2011, Auburn experienced a 13% increase in jobs which was likely concentrated in Olympic Park which is outside this region. Liverpool experienced a 10% increase in local jobs, while Fairfield experienced minimal growth (1%) and Holroyd experienced a decline (-9%).

Access to employment is a significant barrier for this region of Sydney. The draft South West District Plan highlights that only 6% of jobs in Greater Sydney are accessible to residents living in South West Sydney within a 30 minute travel time. This compares to a Greater Sydney average of 16%.

Insights

The following trends can be observed across the mapping:

- Growing population and very high unemployment.
- Low dependency ratio which suggests the population is generally of working age.
- Lower effective job density compared to the rest of Greater Sydney.
- Good accessibility to district centres by private vehicle but this is likely to be much lower for public transport.
- Very low higher educational attainment levels and low VET attainment levels compared to the rest of NSW.
- Very high employment vulnerability risk particularly across Liverpool and Fairfield which is likely due to lower education levels and higher unemployment.
- Highest concentration of disadvantage across Greater Sydney.
- Rental housing is unaffordable or moderately unaffordable. It is one of the most affordable locations in Sydney for a resident on a median income. However, residents on low incomes, which is evident in this region, would likely be in housing stress.
- Very high youth unemployment, particularly in Fairfield.
- Very low female participation in the workforce compared to male participation. The participation gap is significantly higher than the NSW state average.
- Proportion of part time workers in the workforce is lower than the state average which suggests underutilisation of employed residents not a significant issue.

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[1] LGA level data is for Fairfield, Liverpool and former Auburn and Holroyd LGAs.

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- DII for South West Sydney (53.9) is lower than for Sydney (57.5) but higher than NSW (54.9) and Australian average (54.5). Affordability and digital ability scored lower compared to Sydney and NSW. The DII has improved between 2014 and 2016.

Opportunities

Access to jobs for residents in South West Sydney is a significant issue and this is reflected in the concentration of disadvantage evident in the mapping. Residents face time and travel cost barriers to accessing appropriate employment, or other constraints (such as having to be proximate to schools for their children, or having to be at home because of caring responsibilities). Access to employment is also constrained by a mismatch of skills to the needs of the available jobs. There are two main opportunities to address this which have been identified below.

1. Improve accessibility to key employment centres in Greater Sydney.

Greatly improved accessibility to key employment centres is important to increase employment opportunities for residents. In the short to medium term, access to growing employment in Parramatta will be important. In the longer term, access to Western Sydney Airport where there is proposed to be a significant concentration of jobs across a range of occupations will be important.

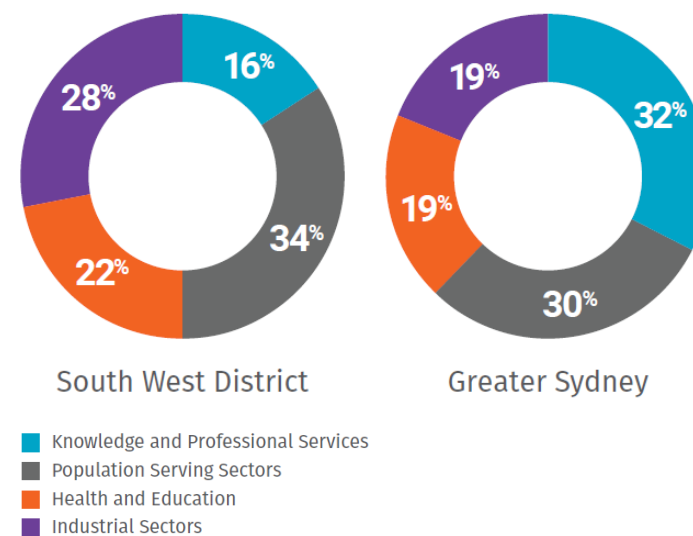**2. Remove barriers to workforce entry for local residents.**

Barriers to enter the workforce for many will be related to low levels of educational attainment. Strategies to improve educational attainment (both VET and higher education) will be crucial. Even small interventions such as increasing access to

English language training could be beneficial for many in this area (particularly refugees or recent immigrants). Both financial and physical accessibility to educational institutions are barriers which should be addressed.

Female participation in the workforce should be increased. Physical accessibility to employment opportunities will again be an important driver of participation.

South West Sydney has a much lower proportion of knowledge and professional services jobs compared to Greater Sydney (refer to Figure 3.

FIGURE 3: EMPLOYMENT PROFILE BY SECTOR

South West District

Greater Sydney

- Knowledge and Professional Services
- Population Serving Sectors
- Health and Education
- Industrial Sectors

Source: Greater Sydney Commission, 2016

8. SHOALHAVEN AND SOUTH COAST

Shoalhaven and South Coast has experienced high population growth and has a high unemployment and a high dependency ratio. There is a need to understand both how access to labour for businesses and how access to jobs for residents can be improved.

The region

Shoalhaven and South Coast spreads across two NSW Government regions: Illawarra – Shoalhaven and South East and Tablelands. This analysis focuses on Nowra in Shoalhaven LGA, Batemans Bay in Eurobodalla LGA and Bega in Bega Valley LGA.

In 2016, there were 170,000 residents living across the three LGAs (Shoalhaven, Eurobodalla and Bega Shire). Between 1996 and 2016, the population grew by around 24%. As of 2011, there were 51,000 jobs across this region with the majority of jobs concentrated in Shoalhaven. Between 2006 and 2011, jobs growth was greatest in Shoalhaven (8%), compared to Eurobodalla and Bega (3%).

The centres are spread down the coast and likely to be somewhat disconnected. Nowra is located 160 km from Sydney (2.5 hours' drive) and Bega is located 260 km from Nowra (3.5 hours' drive). Nowra and Batemans Bay are bypassed when travelling from Sydney to Bega. Canberra is the closest capital city being 230 km (2.75 hours' drive) to Bega.

Accessibility and connectivity are likely to be major barriers with the only airport being located at Merimbula which is a 30 minute drive south from Bega. Merimbula has direct flights to Sydney and Melbourne.

There are no regional cities within this region with the closest being Wollongong and Wagga Wagga. Nowra, Batemans Bay and Bega are all regional centres under the *Illawarra – Shoalhaven Regional Plan* and *South East and Tablelands Regional Plan*. Regional cities generally provide higher order services more so than regional centres.

Insights

The following trends can be observed across the mapping:

- Ageing population with high dependency ratio in Batemans Bay and Nowra.
- There are fewer job opportunities in this region. Major employment centres such as Sydney and Canberra are not within a commuting distance which is a barrier to attracting a working age population.
- High unemployment across the region, particularly in Nowra.
- Low higher educational attainment levels compared to NSW average, particularly in Nowra and Batemans Bay.
- Batemans Bay is high risk in terms of employment vulnerability which means it is vulnerable to job loss and income changes, residents who have lower skill levels are most vulnerable.
- Concentration of disadvantage in Nowra and Batemans Bay.
- Rental housing is either at acceptable or affordable levels. The region is much more affordable compared to Wollongong as well as Kiama which attract a retirees.
- Youth unemployment is slightly higher than the NSW state average.

- Female participation in the workforce is marginally lower than male participation. The gap is at or above the NSW state average.
- In Batemans Bay there is a high proportion of residents aged 65 to 75 years who would be supporting the labour force through volunteering, 'importing' money and making new investments in the region.
- Significantly high proportion of part time workers in the workforce which potentially indicates underutilisation of local labour.
- DII for South Coast NSW (48.6) is lower than NSW (54.9) and Australian average (54.5). Affordability and access are the main gaps for South Coast NSW when compared to the benchmarks for NSW and Australia. The DII has improved between 2014 and 2016.

Opportunities

Improving access to labour for businesses and access to jobs for residents should both be priorities to ensure the long term sustainability of the Shoalhaven and South Coast region. Additional income capture by greater 'recycling' of investment and expenditure will also assist in a more sustainable economy. Three main opportunities to address this are identified below.

1. Increase job opportunities where these are deficient.

In order to increase job opportunities for residents, and reduce unemployment, businesses will need to be attracted to the regional centres. Accessibility is likely to be a major barrier to strategic employment growth in this region. It is expected that there will continue to be employment in population serving and tourism industries.

2. Remove barriers to workforce entry for local residents.

A significant barrier for the current labour force, particularly youth, is likely to be education attainment and skill levels. Increasing education attainment will be important, particularly for industries which are growing in this region.

Reskilling will be an important mitigation response to a changing regional economy. This will assist in addressing employment vulnerability and unemployment rates.

3. Develop pathways to business expansion.

Developing pathways to business expansion for appropriately skilled labour will help to capture more local expenditure and expand job opportunities for local residents. The focus in this region is likely to involve business advisory services for local tourism operators and retail to improve the skills and offer of these businesses and expand employment opportunities for local residents.

This will help to support the principal industry sectors particularly agriculture, food product manufacturing, tourism and health care. Reducing the reliance on seasonal workers from outside the region in agriculture and food product manufacturing will assist in reducing income leakage. Business advisory services will likely assist in developing expansion potential for tourism operators.

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Sheep, beef cattle and grain farming (B)
- Food product manufacturing (B)
- Accommodation (B)
- Residential care services (B)

Principal industry sectors to drive growth:

Bega

- Tourism
- Dairy product manufacturing
- Dairy cattle farming

9. RIVERINA MURRAY

The Riverina-Murray region has experienced high population growth and has a low jobs to worker ratio. Improving access to labour for businesses, and access to jobs for residents are both important in this region.

The region

The Riverina-Murray Region includes three major regional cities: Griffith, Wagga Wagga and Albury. Albury is located on the border of NSW and Victoria and forms a twin town with the neighbouring settlement of Wodonga. Albury has significant economic (and cultural) links with Victoria.

In 2016, 142,000 residents lived across this region with the majority of the population concentrated in Wagga Wagga and Albury LGAs. Between 1996 and 2016, the population in Albury grew 19% which compares to 16% growth in both Griffith and Wagga Wagga. As of 2011, there were 58,000 jobs across the region. Between 2006 and 2011, there were declines in employment in Albury (-2%) and Wagga Wagga (-1%) with a small increase experienced in in Griffith (1%).

Wagga Wagga is situated halfway between Sydney and Melbourne being 450 km (5 hours' drive) to both capital cities and Canberra is 250 km away (2.75 hours' drive). Albury is located 330 km away from Melbourne (3.5 hours' drive. Griffith is located 2 hours from Wagga Wagga and 3 hours from Albury.

All three cities have regional airports. Wagga Wagga and Albury have direct flights to Sydney, Melbourne and Brisbane, and Griffith has direct flights to Sydney

REGIONAL ECONOMIC GROWTH ENABLERS

Industries of specialisation:

- Sheep, beef cattle and grain farming (G,W,A)
- Fruit and nut tree growing (G)
- Food product manufacturing (G,A)
- Beverage manufacturing (G)
- Grocery, liquor & tobacco product wholesaling (G)
- Road freight transport (W,A)
- Accommodation (A)
- Vocational education (W,A)
- Higher education (W)
- Medical and other health care services (W)

Agriculture, manufacturing and higher education are significant industries of employment across this region. The *Riverina-Murray Regional Plan* notes that it is one of the most productive and diverse agricultural regions in Australia. There are eight university campuses located across the Riverina-Murray region

These sectors, along with road freight transport, will continue to drive growth across the regional economy.

Insights

The following trends can be observed across the mapping:

- Growing population in Wagga Wagga and Albury. Declining population in Griffith. Low dependency ratio which highlights that the region does not have a significant ageing population.
- Low jobs to worker ratio.

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- Higher education attainment levels are below or on par with NSW average. This that tertiary students do not remain in the region after completing university. Education levels are lower in Griffith compared to Wagga Wagga and Albury.
- High employment vulnerability risk in Griffith and parts of Albury. Medium high risk in Wagga Wagga and rest of Albury. This is likely reflective of the lower education levels in Griffith.
- Disadvantage is concentrated in the town centres with the highest concentration in Albury and Griffith. Surrounding, more rural locations, are the least disadvantaged.
- Rental housing is affordable in Griffith and Albury and Acceptable in Wagga Wagga.
- Youth unemployment is on par with the state average or lower.
- Female participation in the workforce is lower compared to male participation. The gap is generally on par with the NSW state average.
- Proportion of part time workers in the workforce varies across the region. It is higher in Albury which potentially indicates underutilisation of local labour.
- DII for Murray and Murrumbidgee (48.4) is lower than NSW (54.9) and Australian average (54.5). Affordability is significantly lower compared to NSW and Australia. The DII has improved between 2014 and 2016.

Opportunities

Additional income capture by greater 'recycling' of investment and expenditure will enhance the wealth of the region and labour market opportunities. Improving access to labour for businesses and access to jobs for residents should also be priorities to ensure the ongoing sustainability of the Riverina-Murray labour force. Two main opportunities to address this are identified below.

1. Develop pathways to business expansion.

The Riverina-Murray contains a concentration of agriculture, particularly food production. A skilled workforce is important to the ongoing sustainability of these industries. It is likely that the region relies on a temporary workforce due to fluctuations in need for labour at various points in the agricultural season. This raises the issue of whether additional 'off-season' opportunities can be created for a more stable workforce and increase capturing of income within the region. The long term sustainability of these industries requires an appropriately skilled workforce. Therefore focusing on skilling local labour to provide for these industries will be important to reduce high leakage of income and therefore expenditure.

2. Increase job opportunities where these are deficient.

Job opportunities particularly for graduates will be important to incentivise the young educated workforce to remain in the region. Encouraging collaboration between the universities and business will assist in promoting greater matching of education and skills to employment opportunities.

REGIONAL ECONOMIC GROWTH ENABLERS

Principal industry sectors to drive growth:

Griffith

1. Wine production
2. Agriculture
3. Food product manufacturing

Wagga Wagga

1. Higher education
2. Agriculture
3. Food product manufacturing
4. Road freight transport

Albury-Wodonga

1. Agriculture
2. Food product manufacturing
3. Road freight transport

10. SUMMARY

This section provides a summary of the key findings and opportunities across the seven regions analysed above.

The above review has identified, across seven regions of NSW, the labour force challenges which will potentially impact the ongoing sustainability of these regional economies. The challenges include:

- ageing population, which results in a declining workforce.
- relocation of young educated workforce to capital cities, which results in a declining workforce.
- low educational attainment levels, high employment vulnerability risk which results in lower levels of participation in the workforce.
- low female participation in the workforce.

The results are summarised in Table 1. The arrows illustrate the performance of each region compared to each other across the indicators. A very high result generally indicates an issue, such as high unemployment. However, in some instances, high is a benefit for the region i.e. high educational attainment.

Strategies should be aimed at improving access to labour for businesses and access to jobs for residents. The labour force issues for each of the regions have been identified in Table 2. For some regions, both access issues should be addressed.

Four main opportunities have been identified throughout this report:

- Increase job opportunities where these are deficient.
- Remove barriers to workforce entry for local residents including increasing education attainment and skill levels.

- Improve accessibility to employment centres (for Sydney) or accessibility to the region to attract more workers, to increase the relative availability of jobs to local residents and foster business to business connections.
- Develop pathways to business expansion for appropriately skilled labour to capture more local expenditure and expand job opportunities for local residents.

These opportunities are summarised by region in Table 3.

The regions reviewed as part of this study are generally more affordable compared to the capital cities which presents an opportunity to attract and grow the workforce (though of course house prices trend with the strength of the economy and the employment base).

Following the release of the 2016 Census data, analysis of migration patterns will allow for more detailed analysis of the flows of labour into and out of these regions over the last five years. In particular, the analysis could focus on whether people move to these regions to retire or for employment, or whether people are leaving these regions for other employment opportunities or relocating for retirement. This will better inform strategies to attract workers to these regions.

The level of government support or intervention required will depend on whether the potential of the existing resident population needs to be further unlocked e.g. increasing participation through training and upskilling, or whether fundamental change is required e.g. education and access to employment.

Economic development initiatives should be tailored to the local region. The NSW Government should consider the existing endowments and industries of specialisation within each of the regions and build on these through investment.

The strong nexus between the relative regional industry strengths and the capacity of the local labour force needs to be recognised.

For example, in locations where there is a significant ageing population, investing in health and well-being to underpin productivity and the contribution that human capital can make to the local economy, will be important. Prospects to deepen the economy of some of these 'lifestyle' regions may be limited so the effort should be focussed on developing excellence in the sectors which are population dependent such as health.

For regions which rely on nature-based tourism, protecting and indeed nurturing the natural environment will be important to the long term sustainability of the regional economy. Investment in environmental care and restoration shouldn't be seen as 'make work' schemes but rather as investment in the fundamental 'infrastructure' of regions (albeit natural rather than man-made infrastructure).

Transitioning labour into new opportunities such as renewable energy development and generation, and resource recovery and recycling, should also be a focus in regions affected by structural economic change.

In a future where technology will continue to disrupt and replace traditional employment, the need for such targeted government intervention to sustain the economic base and livelihood of regions will increase. This report is intended to contribute early thinking on the nature of such interventions.

The focus of this analysis is labour force patterns and issues. The report presents broad opportunities related to labour force development across seven regions in NSW. It will be important to draw on this analysis within the Regional Economic Development Strategies currently being prepared by Infrastructure NSW to ensure that there is a clear link between economic development and prospects for the local labour force.

TABLE 1: SUMMARY OF INDICATOR RESULTS BY REGION

Indicators	Northern Rivers	Mid-North Coast	New England	Central West	South West Sydney	Shoalhaven and South Coast	Riverina-Murray
Population growth	↑	↑↑	↑	↑	↑↑↑	↑	↑
Unemployment rate	-	-	↑	-	↑↑	↑	-
Dependency	↑	↑↑	-	-	-	↑	-
Jobs to Workers ratio	↓		↓	↓	-	-	↓
Educational attainment	↓	↓	↓	↓	↓↓	↓↓	↓
Employment vulnerability risk	↑↑	↑	-	↑	↑↑	↑↑	↑
Disadvantage	↑↑	-	↑	↑	↑↑↑	↑↑	↑↑
Rental housing affordability	↓↓	↓	↑	↑	↓	↓	↑
Youth unemployment	-	↑	↑	-	↑↑	↑	-
Female participation	↓	↓	↓	↓	↓↓	↓	↓
Underutilisation (part-time workers)	↑↑	↑	-/↑	-/↑	↓	↑	-/↑
Digital Inclusion Index	↓	↓	↓	↓	↓	↓	↓

Note: the results are based on comparing the results across each of the regions.

LEGEND

Results	Description
↑↑	Very high
↑	High
-	Average or limited
↓	Low
↓↓	Very low

TABLE 2: SUMMARY OF LABOUR FORCE ISSUES BY REGION

Labour force issues	Northern Rivers	Mid-North Coast	New England	Central West	South West Sydney	Shoalhaven and South Coast	Riverina-Murray
Access to labour for businesses	✓	✓	✓	✓		✓	✓
Access to jobs for residents		✓	✓	✓	✓	✓	✓

TABLE 3: SUMMARY OF OPPORTUNITIES BY REGION

Indicators	Northern Rivers	Mid-North Coast	New England	Central West	South West Sydney	Shoalhaven and South Coast	Riverina-Murray
Increase job opportunities where these are deficient						✓	✓
Remove barriers to workforce entry for local residents	✓	✓	✓	✓	✓	✓	
Improve accessibility to employment centres or access to region	✓		✓		✓		
Develop pathways to business expansion		✓	✓	✓		✓	✓

APPENDIX: SUMMARY OF INDICATORS

TABLE 4: SUMMARY OF INDICATORS

Indicator	Measurement	Data source	Reference year	Geography
Current Population	Estimated Resident Population Dot Density: 1 dot = 1,000 people	DPE Population Projections 2014/TPA LU Projections 2016	2016	LGA 2011
Historical population growth	% growth	ABS Census 1996 DPE Population Projections 2014 TPA LU Projections 2016	1996, 2016	LGA 2011
Forecast population growth	% growth	DPE population projections 2014 TPA LU16 projections 2016	2016,2031	LGA 2011
Dependency Ratio	Ratio of Non-Working (<15;>64 years) to Working (15-64 years)	ABS ERP 2015 by Age and Sex	2015	LGA 2011
Change in Dependency Ratio	Change in Ratio of Non-Working (<15;>64 years) to Working (15-64 years)	ABS ERP 2001/2015 by Age and Sex	2001, 2015	LGA 2011
Unemployment rate	Unemployment Rate - %	Department of Employment – Small Area Labour Markets 2017	2017	LGA 2011
Change in unemployment rate	Change in % points	Department of Employment - Small Area Labour Markets 2017	2010, 2017	LGA 2011
Current employment	Total Jobs Dot Density: 1 dot = 250 jobs	ABS Census 2011 – Place of Work	2011	LGA 2011
Growth in Jobs	% growth	ABS Census 2006/2011 – Place of Work	2006, 2011	LGA 2011
Jobs-Housing Balance	Ratio of Jobs to Workers	ABS Census 2011	2011	LGA 2011
Rental Affordability	Rental Affordability Index	SGS Economics and Planning RAI 2016	2016 Q4	Postcode/LGA 2011
Population density	People per hectare	ABS Census 2011	2011	SA1
Socio-Economic Indexes for Areas (SEIFA)	Index of Relative Socio-Economic Disadvantage (IRSD) (see details below)	ABS Census 2011	2011	SA1
Agglomeration	Effective Job Density	SGS Economics and Planning EJD 2011	2011	SA2

Youth Participation in Workforce	Youth Unemployment Rate - % (15-24 years)	ABS Census 2011	2011	SA2
Educational Attainment (Tertiary Level)	Proportion of people with tertiary qualification % Vocational Education (VET) Higher Education (Bachelor degree and higher)	ABS Census 2011	2011	SA2
Employment Vulnerability	Employment Vulnerability Index (see details below)	CoFEE Employment Vulnerability Index - Second Edition 2013	2013	SA2
Additional population capable for work	Number of people aged 65-75 years, without a disability and not already in the workforce as a proportion to total workforce	ABS Census 2011	2011	SA2
Female participation in the workforce	Difference in in % points between females not in the workforce compared to males	ABS Census 2011	2011	SA2
Access to regional cities/strategic centres	Access to regional cities/district centres within 30-60 minutes by private vehicle	SGS Economics and Planning 2011	2007 (2016 Partial Update)	HEX

Source: SGS Economics and Planning, 2017

Employment Vulnerability Index

The employment vulnerability index comprises three indicators:

- The proportion of people employed in construction, mining, manufacturing, retail, accommodation and food services, financial services and property operations and real estate services
- The proportion of people without post school qualifications and
- The proportion of people working part-time.

For more information refer to http://e1.newcastle.edu.au/coffee/pubs/reports/2013/CofFEE_EVI_V2_Report_2013.pdf

Socio-Economic Indexes for Areas (SEIFA)

The Index of Relative Socio-economic Disadvantage (IRSD) is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area. Unlike the other indexes, this index includes only measures of relative disadvantage. The measures are detailed below.

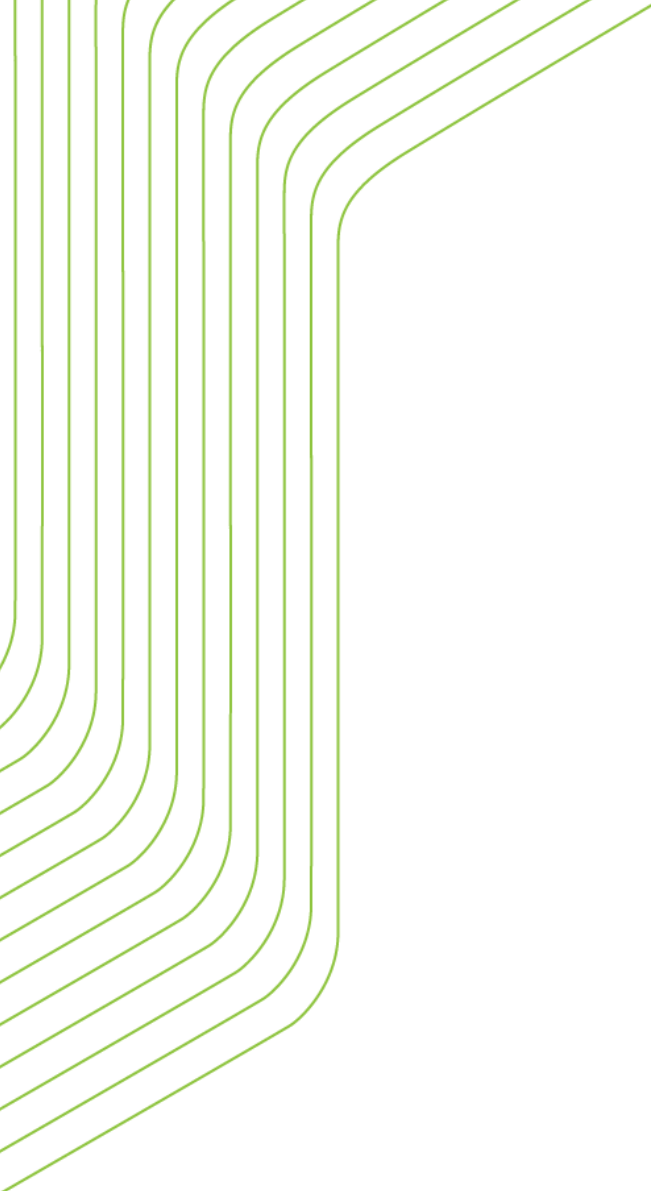For more information refer to http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2033.0.55.001main+features100052011

Variable	Description	Loading
ENGLISHPOOR	% of people who do not speak English well	-0.34
NOEDU	% of people aged 15 years and over who have no educational attainment	-0.44
OCC_SERVICE_L	% of employed people classified as low skill Community and Personal Service workers	-0.5
OCC_DRIVERS	% of employed people classified as Machinery Operators and Drivers	-0.52
OVERCROWD	% of occupied private dwellings requiring one or more extra bedrooms	-0.52
SEP_DIVORCED	% of people aged 15 years and over who are separated or divorced	-0.54
NOCAR	% of occupied private dwellings with no cars	-0.56
DISABILITYU70	% of people under the age of 70 who have a long-term health condition or disability and need assistance with core activities	-0.66
ONEPARENT	% of one parent families with dependent offspring only	-0.71
LOWRENT	% of occupied private dwellings paying rent less than $166 per week (excluding $0 per week)	-0.73
UNEMPLOYED	% of people (in the labour force) who are unemployed	-0.74
NOYEAR12ORHIGHER	% of people aged 15 years and over whose highest level of education is Year 11 or lower	-0.75
OCC_LABOUR	% of employed people classified as Labourers	-0.75
NONET	% of occupied private dwellings with no internet connection	-0.81
CHILDJOBLESS	% of families with children under 15 years of age who live with jobless parents	-0.85
INC_LOW	% of people with stated household equivalised income between $1 and $20,799 per year	-0.9

Digital Inclusion Index

The Digital Inclusion Index (DII) includes three sub-indices:

- Access: internet access, internet technology and internet data allowance.
- Affordability: relative expenditure and value of expenditure.
- Digital ability: attitudes, basic skills and activities.

For more information refer to http://digitalinclusionindex.org.au/about/about-digital-inclusion/

Contact us