



THE MCKELL INSTITUTE

The Up-Skill Battle

NSW'S GROWING REGIONAL SKILLS SHORTAGE

MARCH 2023

ABOUT THE MCKELL INSTITUTE

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CONTENTS

PART 1: UNDERSTANDING AUSTRALIA'S SKILLS SHORTAGE CHALLENGE	10
The skills crisis is a national and international challenge after COVID-19 restrictions	10
Falling unemployment globally leading to competitive immigrant market.....	12
Labour shortages are positive for some, while challenging for many.....	13
Shortages likely cyclical in cities, but structural in the bush	15
Drivers of regional skills shortage can be distinct to communities.....	16
Shortages of skilled labour compound community challenges and accelerate localised economic decline	16
PART 2: NSW'S REGIONAL SKILLS CRISIS	18
NSW's unemployment rate is at 50-year lows, challenging regional employers	19
Regional NSW's unemployment rates vary	19
Not every community has the same labour needs or shortages	20
Demographic forecasts show much of regional NSW declining in population.....	20
NSW's regional population is also growing older, placing pressure on essential services	23
Educational attainment in regional NSW remains strong.....	23
Considerable investments in VET are underway, but challenges in VET remain.....	25
There are 'roadblocks' to attracting migrants, domestic and foreign, to the bush.....	26
Current initiatives unlikely to be sufficient to attract key workers to regions.....	26
National and state-wide data doesn't reflect granular local skills challenges.....	27
COMMUNITY CASE STUDIES	30
Case Study: Gunnedah Leather Tannery Struggling to Find Workers	30
Broken Hill: Business owners training to become carpenter to address his business' needs, while others buy staff houses.....	31
Case Study: 2022 Floods Impact Labour Supply & Council Resources.....	33
Case Study: Moama Labour Shortage Compounded by Disaster	34

PART 3: FORECASTING LABOUR DEMAND IN REGIONAL NSW	36
Job vacancy data provides a window into employer needs.....	36
At a state-wide level, the skills crisis is projected to worsen by 2027	37
Breaking down skills demand by individual region.....	39
Many regional NSW communities are 'Skills Deserts' – or will be by 2027	40
1. Capital Region Skills Shortage Projection.....	42
2. Central West Skills Shortage Projection.....	43
3. Coffs Harbour & Grafton Skills Shortage Projection.....	44
4. Far West & Orana Skills Shortage Projection	45
5. Hunter Valley Skills Shortage Projection	46
6. Illawarra Skills Shortage Projection	47
7. Mid North Coast Skills Shortage Projection.....	48
8. Murray Skills Shortage Projection.....	49
9. New England & Northwest Skills Shortage Projection.....	50
10. Newcastle & Lake Macquarie Skills Shortage Projection.....	51
11. Richmond & Tweed Skills Shortage Projection.....	52
12. Riverina Skills Shortage Projection.....	53
13. Southern Highlands & Shoalhaven Skills Shortage Projection.....	54
RECOMMENDATIONS FOR CONSIDERATION	55
CONCLUSION	58
REFERENCES	59



FOREWORD

When COVID-19 first began to shutter New South Wales' economy, most predicted the worst economic collapse since the Great Depression. Fast-forward three years, and the state's economy is experiencing an altogether different challenge, as the faster-than-expected recovery places strains on the supply of goods, services and labour.

Today, Australian workers are experiencing the lowest rates of unemployment since the early 1970s. Though data from early 2023 suggests the unemployment rate will likely increase marginally this year, the reality is that most Australians who want to find work are able to do so.

That is something to celebrate. But it is also creating new challenges — especially in regional Australia and New South Wales. In many metropolitan centres, the labour shortages associated with such historic unemployment lows are something of a new phenomenon.

But in regional New South Wales, today's labour shortfalls are exacerbating long-term structural barriers to attracting, retaining and fostering skilled labour forces in regional communities.

This report is not the first to consider New South Wales' regional labour challenges. It does, however, offer a more granular focus of both the determinants of regional NSW's skills crisis, as well as the approach governments can take in order to more strategically address the barriers to attracting skilled labour to specific communities.

This report then presents the findings of a novel forecast of job vacancies shortages in specific regional areas, utilising jobs advertisements data to gauge the mismatch between skilled labour and demand for labour in regional areas.

It is also informed by fieldwork undertaken across regional New South Wales — in communities such as Broken Hill, Moama, Bourke and Gunnedah.

This report finds that the broader economic and demographic trends driving regional New South Wales' skills crisis are compounded by specific roadblocks to attracting and retaining residents in certain communities.

Only by better localising decision-making around state and federal government investments in these communities, it finds, will some of these barriers begin to be addressed.

Regional NSW is a diverse and remarkable part of the world. But without a bold new approach to regional investment, it will continue to be hampered by a lack of skilled workers for decades to come.

EXECUTIVE SUMMARY

This report provides a comprehensive analysis of the state of regional New South Wales' labour market challenge; the barriers communities face to attracting and retaining a local skilled workforce; and the unique nature of labour shortages in specific New South Wales' regions.

The skills crisis facing New South Wales is not unique to the state. In the aftermath of the most significant COVID-19 restrictions, many economies, including New South Wales', Australia's and advanced OECD comparators abroad, have seen a rapid rebound in economic activity. Buoyed by fiscal and monetary stimuli, economies emerged from the most acute periods of restrictions to see demand quickly outstrip the supply of many basic commodities, as well as of labour.

Australians have been experiencing this dynamic primarily through increased consumer prices: inflation throughout the Australian economy has reached generational highs, leading to both fiscal and monetary policy tightening.

For many communities, however, one of the most challenging aspects of this new paradigm has been the remarkable shortfall of skilled labour that has emerged. Today, Australia's unemployment rate is the lowest it has been since the early 1970s. In many small labour market areas across the country, including in regional New South Wales, a state of effective full employment has been achieved. In many ways, this is welcome news: it means that most Australians who desire work can find it. But it is

also making it harder for businesses and public sector employers to find and attract skilled workers — a challenge that is especially acute in regional Australia, and regional New South Wales.

This report examines this dynamic.

PART 1 provides the context for today's current labour market challenges. It details how the COVID-19 pandemic and government responses to it led to considerable economic disruption, and how, by 2021, a rapid growth in demand for goods and services placed considerable pressure on global supply chains, and on the supply of labour.

Part 1 also notes, however, that while labour shortages in Australia and elsewhere are undoubtedly driven by this period of economic instability, the determinants of labour and skills shortages in regional NSW are more structural, more long-term, and pre-dated the additional shock of COVID-19.

PART 2 then considers the skills and labour shortfall specifically from a regional NSW perspective. Regional NSW is not a monolith: it is a culturally, economically, geographically and demographically diverse set of Australian communities.

However, one of the commonalities almost every regional NSW community is facing in 2023 is the struggle to attract and retain skilled labour within their communities — irrespective of what specific skill set is most in demand in any one community.

Part 2 considers the structural determinants of this challenge, including the demographic shifts that are seeing many communities decline in population and advance in median age, as well as the lack of ability to attract international labour into the regions given an increase in global competition for migrant labour.

Part 2 also emphasises, however, that quite outside of these macro determinants are isolated, community-specific 'roadblocks' to attracting skilled workers. This might be a localised lack of affordable housing; a lack of childcare services; a lack of health services; inadequate public transportation; localised incidences of crime; or the increasing prevalence of disruptive, costly natural disasters. It notes how the 2022 floods, for example, reflect the type of event that may dissuade some individuals from seeking opportunities in the regions.

PART 3 then offers a projection of the skills that will be in demand in NSW regional areas to 2027, and warns of the emergence of 'Skills Desert Areas' in regional New South Wales. It illustrates the findings a novel economic model designed to project Quarterly Jobs Vacancies in each of the 13 SA4 regions of New South Wales by 2027. The data is illuminating in describing the variations in labour requirements and availability across New South Wales, but is worrisome in highlighting how acute labour shortfalls are projected to be within just a few years.

FINALLY, this report concludes with several succinct recommendations aimed at strategically addressing the roadblocks to attracting and retaining skilled workers in New South Wales communities. It emphasises the need for state and federal governments to work intimately with local decision makers to address the highly localised roadblocks to attracting workers to a certain region.

KEY FINDINGS

1 Regional NSW is experiencing acute skills and labour shortages, which in the majority of regions is set to worsen over the next five years. **Some of these regions could be considered ‘Skills Deserts’**, where entrenched skills shortages are accelerating localised economic decline.

2 The skills and labour shortages being experienced in regional NSW are not unique. However, urban skills shortages in major metropolitan areas are currently being compounded by cyclical economic trends and pandemic-induced disruptions, whereas the **skills and labour shortages seen in much of regional NSW are structural.**

3 International **competition for migrant workers** has meant that domestic labour shortages are not able to be easily addressed in regional NSW through international migration.

4 Many regions in NSW are experiencing remarkably low unemployment rates, with **some regions demonstrating effective full employment.** This is advantageous for those who are employed; the downside, however, is that employers — including public sector employers of frontline key workers — are unable to hire local labour.

5 Regional NSW's structural labour and skills shortages are largely driven by demographic shifts: **many communities are getting smaller, while most are also ageing**, with the median age in regional NSW set to be 4.5 years older than that of Greater Sydney by 2042.

6 These challenges cannot simply be addressed by improving the state's educational pathways. There are other roadblocks to local communities meeting local labour needs, which demand more than educational interventions. **Increased housing prices in regional NSW and a lack of health, caring and pre-tertiary educational and early-childhood facilities are major barriers** to attracting and retaining labour. **These roadblocks need to be strategically eliminated, in collaboration with communities** if acute labour demands are to be met in the near to medium term.

PART ONE:

UNDERSTANDING AUSTRALIA'S SKILLS SHORTAGE CHALLENGE

KEY POINTS

- 1 The global economy has been hit by labour & skills shortages since the economic rebound after COVID-19 restrictions.
- 2 In regional Australia, the skills crisis is not a new challenge, but an entrenched one.
- 3 Regional New South Wales has been in the grip of a structural labour and skills shortage crisis, where natural demographic shifts have not been aligned with available labour in many communities. This is being compounded by more recent economic shocks.

The skills crisis is a national and international challenge after COVID-19 restrictions

When the COVID-19 pandemic emerged in early 2020, little was known about what was to come. The early phases of the pandemic led to extraordinary government interventions in Australia, which led to the shuttering of many industries, and the relocation of millions of Australian workers to the home. For those who were unable to work from home, those early months of 2020 were particularly worrisome.

Millions of tradespeople, carers, transportation and warehousing workers, among many others, were required to put down their tools and stay at home. Many lost their jobs altogether, though major government support measures, such as JobKeeper, mitigated against job losses.



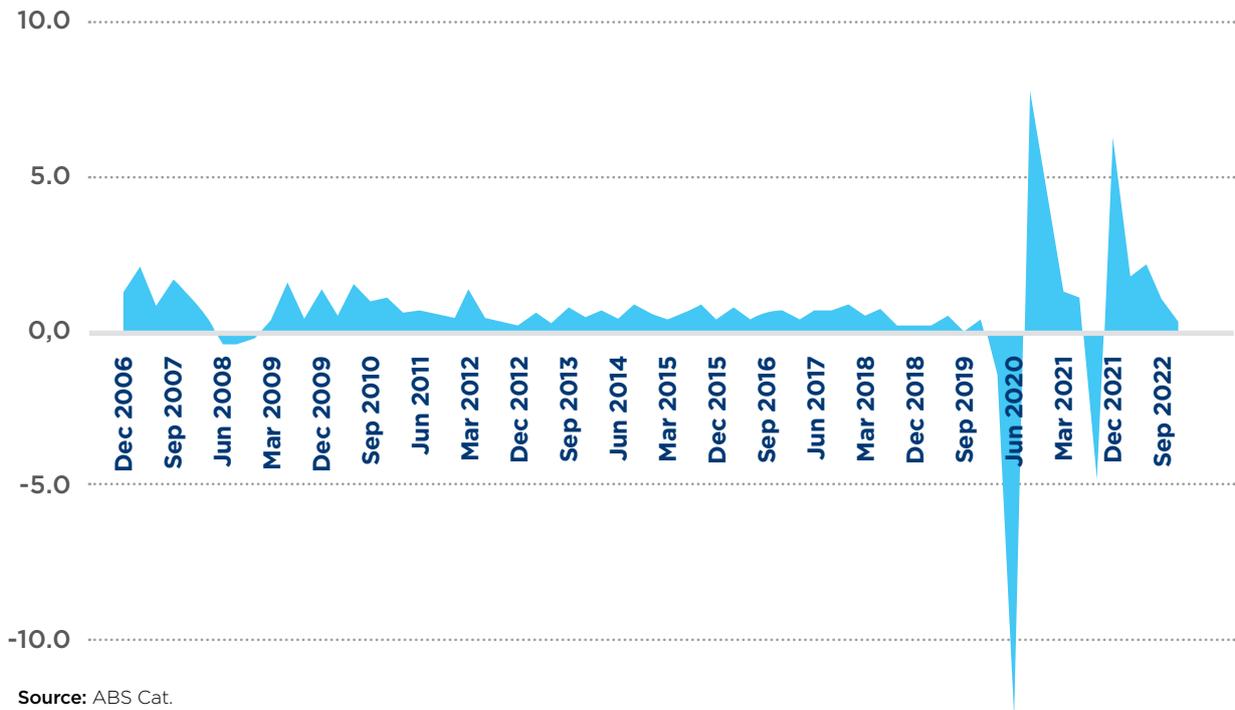


What is a Skills Shortage?

“Skill shortages exist when employers are unable to fill or have considerable difficulty in filling vacancies for an occupation, or specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and reasonably accessible location.”

- NATIONAL CENTRE FOR VOCATIONAL EDUCATION & RESEARCH.

FIGURE 1.1 QUARTERLY CHANGE IN CONSUMPTION DURING, BEFORE COVID-19 SHOCK AND SINCE.



Source: ABS Cat.

When the pandemic emerged, there were very real concerns that the global economy would collapse in a way not seen since the Great Depression in the 1930s. But as support measures were introduced, Central Banks, including the Reserve Bank of Australia, reduced interest rates to record lows. Both measures were successful: in Australia, as well as other advanced economies, demand soon began to grow.

By mid 2021, as vaccines began to be distributed and a return to some degree or normality felt near, this demand for goods began to outstrip the ability of economies to meet it. Unemployment fell to record 50-year lows in Australia as employers frantically searched for workers to meet the unexpected demand, while prices for basic goods and services began to increase — exceeding the consumer price

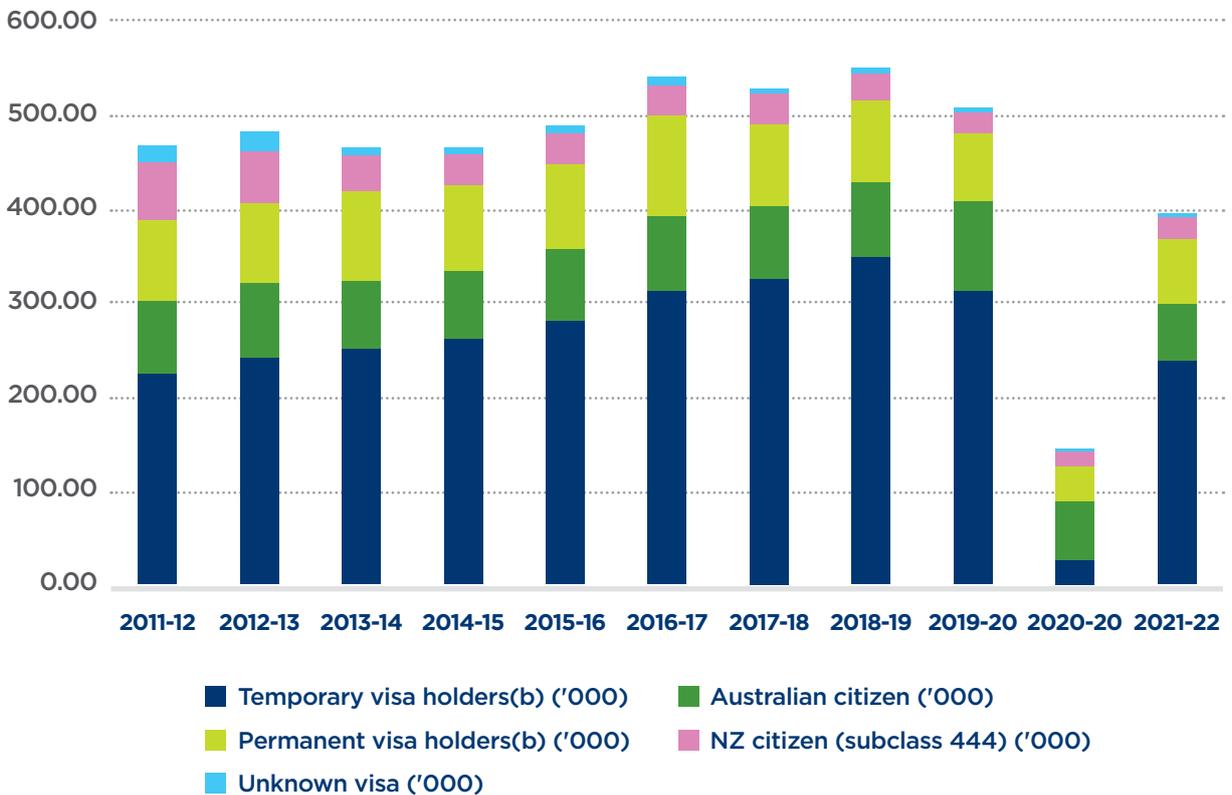
inflation target of 2-3 per cent per-annum, set by Australia's Central Bank.

Simply, while the pandemic threatened all out economic collapse, a combination of active government support, loosened monetary policy, and the quick introduction of vaccines, led to the opposite: an economic rush, which challenged economies globally.

Falling unemployment globally leading to competitive immigrant market

In Australia, as elsewhere, this has led to an acute labour and skills shortage. As the unemployment rate fell to 3.5 per cent – the lowest in Australia since the early 1970s – the availability of labour was lessened. This has made it hard for businesses to meet existing demand, as well as scale their operations to meet forecast increases in future demand.

FIGURE 2.2 OVERSEAS MIGRANT ARRIVALS 2012-2022.



Source: ABS Cat.

When skills and labour shortages are concentrated to a single jurisdiction, or a single country, this domestic labour shortfall can typically be offset by relying on immigration. But the labour and skills shortages of 2023 are not isolated to Australia: they are a global phenomenon. In OECD countries comparable to Australia – particularly English-speaking countries including Canada, the United States, the UK and New Zealand – the same labour market dynamic is challenging economies.





This has encouraged all such governments to explore policies aimed at attracting international talent into their economies to meet this demand, which has emerged since countries reopened their borders to international migration after COVID-19 restrictions eased. For Australian employers, this means that looking internationally for labour is harder, as many prospective workers who may once have sought employment in Australia are increasingly seeing opportunities in other international markets.

Labour shortages are positive for some, while challenging for many

This current dynamic in the labour market has benefits and downsides, both for workers and for employers. It is welcome that most workers in Australia who want to work are now able to find employment. When more workers are employed, this usually grants workers more bargaining power in the workplace, which theoretically leads to increased wages and improved conditions. In the Australian context, however, current evidence of this trend is mixed.

But while low unemployment rates are welcome news for many Australian families, they create challenges for employers — not just private sector employers, but public sector employers, including those of critical front line staff, and especially those in the regions.

The lack of available workers has made it challenging, and in some cases impossible, for employers to find workers to meet the needs of their workplaces. There are now significant shortages of frontline workers across Australia — workers in positions such as teaching, nursing, medicine, and caring. Often, the forecasts are that these shortages will worsen.

The lack of available skilled workers is affecting every Australian community. Even in urban centres, such as Sydney, employers are expressing their frustrations when it comes to hiring workers. Private sector employers do have levers to pull to attract workers, such as increasing wages and improving conditions, but this isn't always possible for smaller businesses that may be struggling to keep afloat.

Industry	Employment level - November 2021 ('000)	Jobs and Skills Australia Projections		
		Employment level - November 2026 ('000)	Projected employment growth - five years to November 2026	
			('000)	(%)
Agriculture, Forestry & Fishing	316.1	332.2	16.2	5.1
Mining	271.3	287.3	15.9	5.9
Manufacturing	864.3	887.3	23.1	2.7
Electricity, Gas, Water & Waste Services	134.1	136.7	2.6	1.9
Construction	1143.6	1210.0	66.4	5.8
Wholesale Trade	359.0	365.6	6.6	1.8
Retail Trade	1281.3	1336.4	55.1	4.3
Accommodation & Food Services	849.5	961.9	112.4	13.2
Transport, Postal & Warehousing,	655.3	695.2	39.9	6.1
Information Media & Telecommunications	192.5	193.2	0.7	0.4
Financial & Insurance Services	528.4	561.6	33.2	6.3
Rental, Hiring & Real Estate Services,	235.5	250.5	14.9	6.3
Professional, Scientific & Technical Services	1226.6	1433.3	206.6	16.8
Administrative & Support Services,	448.3	477.1	28.8	6.4
Public Administration & Safety,	921.7,	980.8	59.2	6.4
Education & Training,	1115.6	1265.2	149.6	13.4
Health Care & Social Assistance	1900.1	2201.1	301.0	15.8
Arts & Recreation Services,	234.3	258.0	23.7	10.1
Other Services	543.8	564.1	20.3	3.7
All Industries	12,951.8	14,128.0	1176.2	9.1

Shortages likely cyclical in cities, but structural in the bush

The skills and labour shortages that are afflicting urban areas of Australia are a significant public policy challenge. However, the acute nature of this challenge in early 2023 is likely to be improved as demand and supply through the economy smooth as the economic shockwaves from COVID-19, and the associated public supports dissipate. In large cities, such as Sydney and Melbourne, lifestyle and career opportunities, over the longer term, have attracted large waves of migrants — both from within Australia and

from overseas — into these urban economies. Despite the imposition of the COVID-19 period, this long-term trend is likely to return.

What this means for skills and labour shortages in urban Australia is that, over the medium term, many of these deficits will likely be met by the increasing number of working age Australians in these jurisdictions. While niche skills will always be in demand, it is projected that by 2024 and beyond, employers in small businesses such as cafes or hospitality venues, will likely have less of a challenge finding employees than they do today.



In rural Australia, however, the COVID-19 pandemic and its associated impacts on the labour market have exacerbated a *structural* skills challenge. Simply, in many regional communities across Australia, demographic factors are seeing populations age out of the workforce, creating demand for certain services which aren't being met by local workers. Across rural Australia, a lack of population growth and the associated lack of working-age Australian and international workers has created significant shortfalls. This is afflicting private sector employers, but also public sector employers. Regional communities are struggling to attract nurses, teachers, doctors, childcare workers, paramedics and other frontline, essential workers — without whom, it is even harder to attract skilled workers for private sector roles.

In much of regional Australia, skills and labour shortages are a structural issue, that have been evident for decades. This longer-term structural trend is now being exacerbated by a cyclical phenomenon in the labour market, which has been brought on the remarkable disruptions associated with the COVID-19 pandemic.

Drivers of regional skills shortage can be distinct to communities

As this research will demonstrate, each individual region and community typically has its own specific challenges when it comes to the drivers of or barriers to attracting skilled workers. Regional New South Wales – the rural jurisdiction that is the focus of this study – is economically broad and diverse. Communities in the Far West of the state, which is remote and sparsely populated, contrast considerably with those situated adjacent to the state's eastern coastline.

The economic and the cultural makeup of these communities is always different, which itself has a differing effect on the availability of skilled labour. Whereas many coastal communities may be reliant on service sector industries, such as tourism, those in more remote corners of New South Wales are typically more dependent on the agricultural, resource or transport sectors.

But while there is considerable economic diversity across regional New South Wales, a number consistent barriers to attracting labour into many separate regions persist. Numerous



research subjects consulted for this project noted that an increase in housing prices, a decline in regional services such as childcare, and ongoing natural disasters in regional communities is weakening the cost-of-living advantage many regional communities could once offer to urban residents.

As this report will describe, this challenge can best be addressed by state and federal governments working closely with community leadership to undertake strategic investments designed to alleviate these 'blockages' to attracting labour to regional communities.

Shortages of skilled labour compound community challenges and accelerate localised economic decline

A lack of skilled labour in a local community can have a "profound effect upon regional sustainability and renewal". When job vacancies go unfulfilled for a sustained period, community services and economic health are effected. This can trigger a 'snowball' effect, where a

breakdown in core economic function in one critical area of the community accelerates the broader decline of that community. If a local aged care facility can not hire enough workers, for example, ageing residents in that community are incentivised to relocated. Similar dynamics occur if a local childcare centre cannot be staffed — this would deter younger families from relocating to this community due to a lack of services.

These events then impact small businesses and general economic activity in that community. Acute skills shortages can be seen, in this context, as a barometer for a community's economic health and a window into its future: without addressing sustained skills deficits in a specific community, it is likely that community will gradually decline economically and in terms of population.



PART TWO: NSW'S REGIONAL SKILLS CRISIS

KEY POINTS

- 1 Few regional NSW communities are immune from the effects of acute skills and labour shortages.
- 2 At times, acute skills shortages have been exacerbated by the closure of tertiary educational facilities in defiance of local community desires.
- 3 While there are commonalities, the skills crisis looks different in each community: localised solutions, generated through local input, and improved localised data collection are key to addressing structural skills deficits in regional NSW.

Regional New South Wales is a vast, diverse and economically dynamic part of Australia. It is not monolithic: communities across the state vary considerably in their cultural, economic, geographic and historic makeup. From tourism-dependent economies on the east coast to resource and agricultural economies in the interior, New South Wales' regions make up one-fifth of the state's Gross State Product. In 2021, this equated to \$125 billion per annum.

TABLE 2.1 FORECAST NSW POPULATION, REGIONAL AND SYDNEY, TO 2042.

	Population in 2022	Population in 2042	Difference
Greater Sydney Region	5,004,708	6,142,275	1,137,567
Regional NSW	3,162,049	3,730,659	568,610

Source: NSW Department of Planning & Environment.



As of 2022, Sydney’s regional population had reached 3.12 million — a considerably higher population than all of Western Australia, Northern Territory, South Australia, Tasmania and the ACT. Though many communities are challenged by certain demographic trends, regional New South Wales is forecast to grow over the coming decades, reaching 3.7 million residents by 2042 and close to 4 million by the middle of the century. Simply, regional New South Wales is a major cultural and economic actor not only in the state of New South Wales, but in a broader Australian context.

But for all its economic strengths, regional New South Wales is also facing considerably headwinds, particularly when it comes to demographic changes, the increased cost of living in regional centers, successive years of

natural disasters, and challenges in attracting international labour to the regions in the wake of increased global competition for migrant labour.

NSW’s unemployment rate is at 50-year lows, challenging regional employers

In the wake of the pandemic shock, New South Wales’ unemployment levels have fallen to record lows. Prior to the pandemic, the state’s unemployment rate sat consistently around the 5 per cent mark. After rapidly spiking during 2020, the rate fell with near equal rapidity in 2021 and 2022. New South Wales entered 2023 with a record low unemployment rate of just 3.1 per cent.

FIGURE 2.1 NSW UNEMPLOYMENT RATE, 2013:2023.



Source: ABS Cat. 6202001.

Regional NSW's unemployment rates vary

The low rates of unemployment seen in state-wide data are often reflected in individual regions. In New South Wales' far west, for example, the rate has exceeded 5 per cent. But in some regional communities, as Part 3 of this report will demonstrate, local economies are experiencing effective full employment, with rates as low as 2.1 per cent. This is welcome news for many workers but imposes considerable challenge and public and private sector employers to attract staff.

Not every community has the same labour needs or shortages

What this shortfall in labour means is different for every individual community. Though there are some consistencies when it comes to attracting skilled individuals in certain professions, the acuity of the need varies depending on the community or region of New South Wales that is being analysed.

The following table illustrates this from a Broad Regional Area perspective. It demonstrates that in some regions of New South Wales, the labour that is most in demand might be entirely distinct from elsewhere. In Newcastle and the Hunter, for example, the most in-demand skill is that of 'white collar' professionals in roles such as reception work, call center or 'general inquiry clerks', whereas in the more remote region of Dubbo and Western NSW, it is doctors and nurses that are most in demand.



TABLE 2.2 MOST IN DEMAND SKILL BY BROAD REGIONAL AREA OF NSW.

Broad Regional Area (SA5)	1	2	3	4	5
Blue Mountains, Bathurst & Central West NSW	Carers and Aides	Sales Assistants and Salespersons	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Automotive and Engineering Trades Workers	Medical Practitioners and Nurses
Dubbo & Western NSW	Medical Practitioners and Nurses	Carers and Aides	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Sales Assistants and Salespersons	Automotive and Engineering Trades Workers
Gosford & Central Coast	Carers and Aides	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Sales Assistants and Salespersons	Medical Practitioners and Nurses	Hospitality Workers
Illawarra & South Coast	Carers and Aides	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Medical Practitioners and Nurses	Sales Assistants and Salespersons	Health Diagnostic and Therapy Professionals
Newcastle & Hunter	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Automotive and Engineering Trades Workers	Carers and Aides	Sales Assistants and Salespersons	Drivers and Storepersons
NSW North Coast	Carers and Aides	Medical Practitioners and Nurses	Sales Assistants and Salespersons	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Legal, Social and Welfare Professionals
Riverina & Murray	Medical Practitioners and Nurses	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Carers and Aides	Sales Assistants and Salespersons	Automotive and Engineering Trades Workers
Southern Highlands & Snowy	Carers and Aides	Sales Assistants and Salespersons	Medical Practitioners and Nurses	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Food Trades Workers
Tamworth & North West NSW	Sales Assistants and Salespersons	Carers and Aides	General- Inquiry Clerks, Call Centre Workers, and Receptionists	Legal, Social and Welfare Professionals	Automotive and Engineering Trades Workers

Source: Author analysis.

	6	7	8	9	10
	Drivers and Storepersons	Other Labourers	Hospitality Workers	Hospitality, Retail and Service Managers	Food Trades Workers
	Legal, Social and Welfare Professionals	Drivers and Storepersons	Other Labourers	Engineers	Hospitality, Retail and Service Managers
	Legal, Social and Welfare Professionals	Hospitality, Retail and Service Managers	Automotive and Engineering Trades Workers	Health Diagnostic and Therapy Professionals	Food Trades Workers
	Legal, Social and Welfare Professionals	Automotive and Engineering Trades Workers	Food Trades Workers	Hospitality, Retail and Service Managers	Other Labourers
	Medical Practitioners and Nurses	Other Labourers	Hospitality Workers	Legal, Social and Welfare Professionals	Business, Finance and Human Resource Professionals
	Other Labourers	Food Trades Workers	Cleaners and Laundry Workers	Hospitality Workers	Hospitality, Retail and Service Managers
	Drivers and Storepersons	Legal, Social and Welfare Professionals	Other Labourers	Health Diagnostic and Therapy Professionals	Hospitality, Retail and Service Managers
	Automotive and Engineering Trades Workers	Drivers and Storepersons	Hospitality, Retail and Service Managers	Legal, Social and Welfare Professionals	Other Labourers
	Medical Practitioners and Nurses	Other Labourers	Drivers and Storepersons	Hospitality, Retail and Service Managers	Health Diagnostic and Therapy Professionals

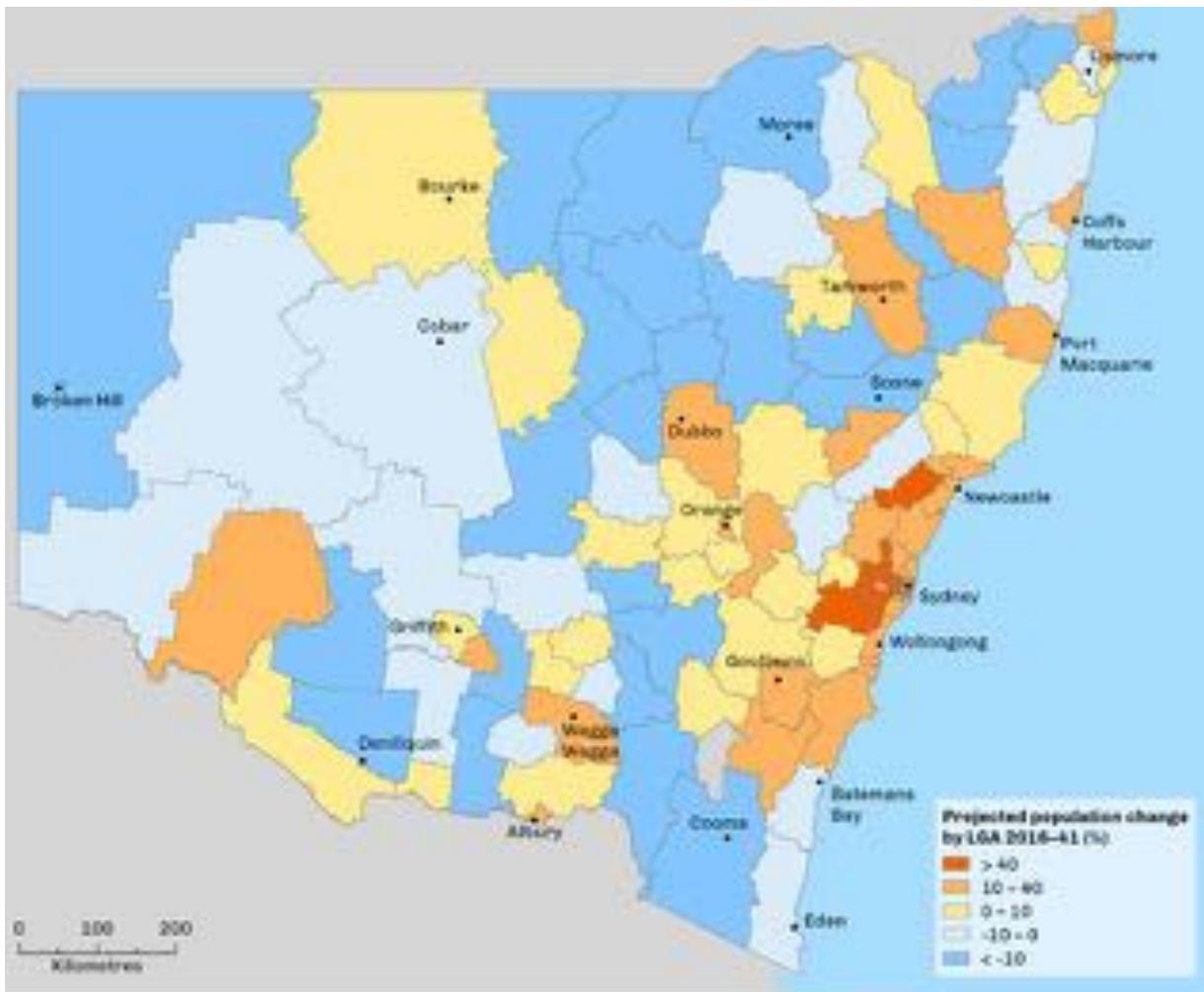
Demographic forecasts show much of regional NSW declining in population

But meeting these demands is becoming harder. NSW’s regional skills challenge is compounded by long term demographic forecasts. Over the next twenty years, regional NSW’s population is expected to grow, albeit more slowly than Greater Sydney. However, this growth will be concentrated largely to coastal communities and larger regional growth centers – communities

like Wagga, Orange, Dubbo, Coffs Harbour and Port Macquarie. Outside of these growth centers, often, populations are set to both decline and, on average, age considerably.

The below figure displays regional NSW areas by their forecast population growth to 2041. While these urban and regional centres are expected to see healthy population growth, dozens of more rural areas are forecast to see their population fall by over 10 per cent in the next twenty years.

FIGURE 3 TITLE TO COME??



Source: NSW Government: <https://www.soe.epa.nsw.gov.au/all-themes/drivers/population>

Of the 35 Local Government Areas in New South Wales that are predicted to record negative growth rates between 2021 and 2041, all are regional communities. The Cobar Local Government Area, in the state’s Central West, is projected to see the most acute long-term decline in its population, with long-term average annual growth over that 20-year period falling to negative 2.6 per cent.

TABLE 2.2 35 LOCAL GOVERNMENT AREAS WITH THE SHARPEST FORECAST CONTRACTION IN POPULATION TO 2042.

NSW LGA's projecting negative growth between 2021-2041	Avg. Rate of Negative Growth
Cootamundra-Gundagai Regional (A)	-0.02
Snowy Valleys (A)	-0.02
Edward River (A)	-0.03
Inverell (A)	-0.05
Lithgow (C)	-0.07
Leeton (A)	-0.11
Carrathool (A)	-0.13
Wentworth (A)	-0.17
Walcha (A)	-0.24
Singleton (A)	-0.25
Upper Hunter Shire (A)	-0.31
Narrabri (A)	-0.36
Narrandera (A)	-0.37
Lismore (C)	-0.47
Hay (A)	-0.49
Weddin (A)	-0.50
Liverpool Plains (A)	-0.54
Warrumbungle Shire (A)	-0.89
Gilgandra (A)	-1.10
Balranald (A)	-1.10
Uralla (A)	-1.15
Lachlan (A)	-1.18
Coonamble (A)	-1.35
Kyogle (A)	-1.36
Tenterfield (A)	-1.39
Narromine (A)	-1.46
Central Darling (A)	-1.60
Unincorporated NSW	-1.69
Warren (A)	-2.07
Walgett (A)	-2.14
Bogan (A)	-2.26
Broken Hill (C)	-2.32
Brewarrina (A)	-2.43
Bourke (A)	-2.49
Cobar (A)	-2.60

Source: NSW Department of Planning & Environment.



Population decline is not trivial. It effects communities in various ways and places compounding pressure on local services. An inability for a community to naturally, or through immigration, replace or grow its existing population will result in that community, over time, reducing its overall economic output. It will also see essential services struggle to be staffed, which in turn would exacerbate the decline of that community as community members are forced to relocate to be more proximate to essential services, such as health and aged care.

NSW’s regional population is also growing older, placing pressure on essential services

Not only are many of regional New South Wales’ communities expecting to see population decline,

but they’re getting older, too. By the 2040s, the median age for an individual living in regional New South Wales is forecast to be 4.5 years older than those in Greater Sydney, at 44 years. Currently, the median age for a New South Wales resident in regional areas is 42.07 years, whereas the median age in Greater Sydney is just 36.58.

Unsurprisingly, aging populations have considerably negative impacts on local communities and local economies. The older the average population, the higher the demand is on health and aged care services. While this can stimulate demand for labour for these services, given the existing and projected shortfall of workers in these industries in regional areas, such demand is likely to see many older residents of certain communities relocate in order to maintain access to these services.

FIGURE 2.3 FORECAST REGIONAL AND GREATER SYDNEY POPULATION THROUGH TO 2042.



Educational attainment in regional NSW remains strong

It is difficult to disentangle policy debate surrounding skills and labour shortages from a broader discussion on educational attainment in Australia and in New South Wales. Conventionally, labour shortages in the Australian labour market have been addressed through various interventions in education policy, such as expansions of subsidised tertiary courses designed to better match the Australians' skills with forecast employment opportunities.

Often, when governments pledge action on addressing skills and labour shortages, the priority is enhancing educational outcomes, and better matching educational outcomes with forecast demand for certain skills. This approach is necessary: governments clearly have an obligation to ensure Australia's educational pipeline is fit for purpose; that it is delivering broader educational benefits to students, while also fostering the skills development required by existing employers, and those in years to come.

But as this report emphasises, educational reforms alone will not be enough to address existing and projected skills shortages in certain regional NSW communities – shortages that are the result of several determinants that extend beyond educational attainment within individual communities or on a state and national level.

The below table illustrates the educational attainment levels of employed people in each across Regional New South Wales between the 2021 census and the 2016 census. The data is generally positive demonstrating that in the five

years to 2021, educational attainment in most regions of New South Wales improved. Regions with higher rates of individuals concluding their formal education at Year 9 or below was reduced in all regions, while those completing tertiary and postgraduate qualifications expanded. Despite these welcome improvements in educational attainment, however, acute skills shortages in regional areas are still prevalent.

TABLE 2.3
CHANGES IN EDUCATIONAL ATTAINMENT, 2016-2021, IN BROAD REGIONAL AREAS OF NSW.

	Postgraduate Degree	Graduate Diploma and Graduate Certificate	Bachelor Degree	Advanced and Diplomas
Capital Region	5.44 (+1.63)	2.72 (+0.23)	16.64 (+1.81)	10.93 (-0.16)
Central West	4.57 (+1.20)	2.43 (+0.20)	16.76 (+1.12)	10.39 (-0.23)
Coffs Harbour - Grafton	4.24 (+1.12)	2.72 (+0.54)	17.69 (+1.07)	11.73 (-0.31)
Far West and Orana	4.53 (+1.66)	2.39 (+0.25)	16.54 (+1.61)	10.16 (-0.08)
Hunter Valley exc Newcastle	3.59 (+0.74)	1.93 (+0.27)	14.13 (+1.15)	10.80 (+0.03)
Illawarra	7.90 (+1.57)	2.85 (+0.25)	20.07 (+2.16)	12.03 (-0.41)
Mid North Coast	4.03 (+1.12)	2.44 (+0.20)	16.12 (+1.66)	11.57 (-0.34)
Murray	3.84 (+0.93)	2.66 (+0.33)	16.07 (+1.64)	11.26 (-0.03)
New England and North West	4.99 (+1.19)	2.51 (+0.28)	16.30 (+1.26)	10.21 (-0.39)
Newcastle and Lake Macquarie	6.83 (+1.41)	2.70 (+0.40)	20.91 (+1.79)	11.58 (-0.38)
Richmond - Tweed	5.51 (+1.58)	3.01 (+0.25)	20.64 (+2.09)	11.84 (+0.07)
Riverina	4.04 (+1.06)	2.36 (+0.38)	16.27 (+1.29)	9.83 (+0.04)
Southern Highlands and Shoalhaven	5.81 (+1.74)	2.84 (+0.14)	17.62 (+2.23)	11.94 (-0.38)
Greater Sydney	14.10 (+3.03)	3.02 (+0.40)	31.29 (+3.57)	11.81 (-0.43)
NSW	11.27 (+2.40)	2.88 (+0.36)	26.94 (+2.83)	11.60 (-0.37)

Source: Author analysis of census data.

Diploma	Certificate III and IV	Secondary Education year 10 and above	Certificate I and II	Year 9 or below
	27.26 (-0.27)	32.44 (-2.50)	0.09 (-0.01)	4.49 (-0.75)
	29.13 (+0.37)	32.02 (-1.79)	0.09 (-0.02)	4.60 (-0.86)
	28.13 (+0.72)	30.91 (-2.32)	0.09 (-0.04)	4.41 (-0.78)
	27.63 (+0.01)	33.28 (-2.22)	0.10 (-0.04)	5.37 (-1.20)
	33.08 (+0.63)	31.78 (-1.86)	0.08 (-0.04)	4.62 (-0.93)
	25.13 (-0.26)	28.74 (-2.59)	0.08 (0.00)	3.21 (-0.71)
	29.71 (+0.25)	31.19 (-1.90)	0.12 (-0.07)	4.83 (-0.91)
	27.72 (+0.17)	33.39 (-2.04)	0.10 (-0.04)	4.96 (-0.97)
	27.03 (+0.75)	33.78 (-2.07)	0.12 (0.00)	5.07 (-1.02)
	25.47 (+0.09)	29.19 (-2.50)	0.08 (-0.01)	3.24 (-0.81)
	24.69 (-0.65)	30.45 (-2.66)	0.08 (-0.03)	3.78 (-0.64)
	27.08 (-0.44)	35.10 (-1.72)	0.11 (-0.01)	5.20 (-0.61)
	28.33 (-0.23)	29.15 (-2.88)	0.08 (-0.04)	4.22 (-0.59)
	13.94 (-1.24)	23.77 (-4.59)	0.04 (-0.01)	2.03 (-0.73)
	18.32 (-0.68)	26.18 (-3.80)	0.05 (-0.01)	2.75 (-0.74)





Considerable investments in VET are underway, but challenges in VET remain

One of the primary levers pulled by governments over successive decades to address skills shortages is investments in vocational education & training (VET). VET is a core component of Australia's educational system, and is particularly important in regional communities where a high proportion of employment opportunities are applicable to the skills acquired through vocational education.

The NSW Government currently subsidises hundreds of VET courses, many of which can be undertaken through enrolment at TAFE or with registered training organisations (RTOs). In 2022-23, the government has offered more than 14,000 fee-free places in these courses. Some of these courses include training for 'micro-credentials' — skills that are certainly essential in many workplaces, but do not constitute formal qualifications. These may include specific licenses, or training for specific tasks, like first-aid, which are important but do not constitute a formal tertiary qualification.

But while there is substantial ongoing investment in vocational education in NSW and across Australia, jobs vacancies in rural areas are sustained. The increasing prevalence of jobs vacancies suggests that current VET policy alone is insufficient in addressing broader challenge of attracting workers into regional communities.

There are 'roadblocks' to attracting migrants, domestic and foreign, to the bush

Irrespective of educational outcomes in NSW, the availability of workers in certain regional communities is influenced by other factors. The push and pull factors related to internal migration within Australia are numerous. The reduced cost of living pressures conventionally associated with regional communities has long been viewed as a draw card to attract workers from metropolitan Australia to the regions.

Purchasing and renting properties in most of regional New South Wales is considerably more affordable than in Sydney and other coastal NSW cities. As the price of housing has increased in regional Australia, the cost-of-living reality in regional Australia has often become closer to what is experienced in metropolitan communities. This makes it harder for regional employers to attract workers.

Current initiatives unlikely to be sufficient to attract key workers to regions

The existence of these ‘roadblocks’ to regional migration is well understood by local, state and national policymakers. Recently in June 2022, the NSW Government announced program designed to assist key workers — frontline workers such as nurses, teachers and police — to access more affordable housing in the regions. The \$780.4m initiative is a ‘shared equity’ scheme, which allows prospective home buyers to purchase a property in effective partnership with a government.

The scheme would see the NSW Government ‘purchase’ 30 per cent of the new home in conjunction with the new owner, with the owners able to ‘buy out’ the government’s stake over an extended duration. While there is merit to the proposal, its effectiveness is yet to be determined. Without first addressing housing supply issues in key regional NSW centers, however, the initiative may in fact worsen housing affordability in regional NSW by expanding the pool of prospective homeowners in these communities.

Conventionally, many Australian governments have relied upon the immigration lever to address localised skills shortages. But as Part 1 explained, increased global competition for skilled migration means it continues to be a challenge to attract foreign migrant labour to many Australian communities, even after COVID-19 has subsided. Certain employers also face considerable costs in attracting these workers to their communities, and covering associated expenses levied upon them by the Commonwealth Government.

Simply, migrant labour is no panacea to Australia’s regional skills shortages: better incentives to retain and attract workers to the regions, and strategic government investments in addressing roadblocks to this outcome, are required in addition to a welcoming migrant policy.

National and state-wide data doesn’t reflect granular local skills challenges

Skills availability is monitored at a national and state-wide level by the National Skills Commission, a Federal Government entity charged with determining trends in the labour market to guide policy interventions. The National Skills Commissions produces valuable labour market forecasts from this high-level each year, releases annual ‘Skills Priority Lists’ which identify current labour market gaps, and predict future demand for certain skills.

Though these data are useful in understanding macro trends in the labour market, they are less useful in guiding strategic and localised interventions aimed at addressing community-specific labour and skills shortfalls. The below table, for example, shows the 25 skill priorities the Skills Commission has identified that are specific to regional New South Wales. An examination of this data would suggest that there is only one skill area - shearing - that is both in shortage and expected to be in considerable demand in the future. Though there is additional New South Wales-wide data that lists more skills areas in this category, the breadth of the regional-specific data renders it less valuable in guiding policy interventions.

TABLE 2.4 SKILLS SHORTAGES SPECIFIC TO REGIONAL NSW IDENTIFIED BY 2022 SKILLS PRIORITY LIST

Skill	Predicted Future Demand
Shearer	Strong
Forester/ Forest Scientist	Moderate
Dermatologist	Moderate
Obstetrician and Gynaecologist	Moderate
Diagnostic and Interventional Radiologist	Moderate
Kennel Hand	Moderate
Track Rider	Moderate
Fishing Leading Hand	Moderate
Wool Classer	Moderate
Dog and Horse Racing Official	Moderate
Sawmilling Operator	Moderate
Logging Plant Operator	Moderate
Train Driver	Moderate
Vineyard Worker	Moderate
Beef Cattle Farmer	Soft
Dairy Cattle Farmer	Soft
Horse Breeder	Soft
Pig Farmer	Soft
Sheep Farmer	Soft
Livestock Farmers nec	Soft
Cotton Grower	Soft
Grain, Oilseed, Pulse or Pasture Grower / Field Crop Grower	Soft
Flower Grower	Soft
Turf Grower	Soft
Vegetable Grower (Aus) / Market Gardener (NZ)	Soft
Anaesthetist	Soft

The above table provides little insight into community-specific labour shortages and demand, which vary considerably by community. This lack of community-specific analyses may limit the capacity of governments to accurately gauge the depth of labour shortages in certain communities, while also limiting the effectiveness of broad, state-wide initiatives aimed at alleviating skills shortages.

The Commonwealth Government's Labour Market Insights website also provides usefully compiled data, extracted from the five-yearly census, to provide an insight into SA4 level labour markets. Additionally, the Regional Australia Institute's Job Vacancy Map provides monthly updates on job vacancy at the same level. These are more useful tools in assessing the contemporary health of regional labour markets and can be used to provide baselines for forward projects at region-wide levels. As this report recommends, however, greater efforts in compiling more localised data – beginning at LGA levels, but ideally at more granular levels – should be considered by governments in order to develop more accurate forecasting abilities, which will be able to guide more effective and strategic interventions.

COMMUNITY C

Case Study: Gunnedah Leather Tannery Struggling to Find Workers

Gunnedah Leather Processors is a major employer in the North-western Slopes region of New South Wales. The business has been operating since 1976, and was purchased by its current owners in 2009. It currently employs 75 workers in Gunnedah, and is one of few factories in Australia with the capacity to convert animal waste products from food production, such as animal skins, into various other products including leather, but also into gelatine and other outputs that are used in food production, as well as in soaps and biodiesel.

The business is led by CEO Wellington, an immigrant from Brazil who has considerable experience in leather production. For Wellington, the prospects for the business are bright: there is demand for his various products, and this is expected to grow. The major barrier, however, is attracting and retaining workers.

“Most recently, we’ve been utilising the Pacific Labour Mobility Scheme. Currently we have 15 workers and have another 12 coming”, he said.

“We have also tried to attract foreign workers. This is a very costly and expensive exercise. It is probably about 15,000 per worker” for the paperwork and process, he said. “Then, the workers didn’t come, and we lost the money”.

Wellington cites the levy on foreign workers designed to upskill workers in Australia as a major cost to his business. The lack of workers is now effective his ability to process the material he has entering his factory.

“We have tonnes of leather to process, but we cannot do so because we do not have the staff”, he says.

The types of tasks required of workers in the factory are varied. The business needs

boilermakers, electricians, welders, machinery operators and engineers to sustain the various practices.

But for Wellington, workers in the region simply are not available. Many flow directly into a local mine, which is the dominant employer. But others are also dissuaded from relocating to Gunnedah due to a lack of affordable housing, and limited access to health and childcare services in Gunnedah itself.

“Housing is a massive issue. It is very challenging for workers to pay. There is a house across the street from me, a 4-bedroom house, that was rented for \$620 per week”, he said.

For many workers, these prices are too high to attract workers from other jurisdictions which might be similarly priced. Wellington said his business has purchased 4 houses to provide to workers.

Broken Hill: Business owners training to become carpenter to address his business’ needs, while others buy staff houses



GERRY, A BROKEN HILL BUSINESS OWNER.

CASE STUDIES

Researchers spoke to Heather, Gerry and Michael, three business owners and employers in Broken Hill, about the various challenges they're facing recruiting and retaining workers in the city. Each of these business owners represent different sectors of the local economy, but face similar barriers to attracting and retaining workers in their sectors.

Gerry owns an engineering and construction firm in Broken Hill, which services the town and surrounding communities in the state's far west.

“The biggest hurdle we have is finding tradespeople”, says Gerry. “And if we do get people to come here, where are we going to put them”, he asks, noting the acute housing shortage afflicting Broken Hill.



HEATHER, A BROKEN HILL BUSINESS OWNER.

Heather runs a medical imaging and disability support services, and notes a similar challenge. For Heather, the best solution to addressing housing issues that face prospective employees was for the business to buy several properties in town, which are then resented to employees at a subsidised rate. Taking ownership of the properties was the only way Heather was able to guarantee that her workers would have access to a house if they relocate to Broken Hill.

Heather also cites a lack of childcare services as a major barrier to attracting younger professionals into the town.

Again, she has taken it upon herself as a business owner to provide creche services for employees, in order to alleviate this barrier. But this isn't sustainable – instead, Heather contends there needs to be a dedicated effort by governments to deliver affordable, available childcare services in the town.



MICHAEL, A BROKEN HILL BUSINESS OWNER.

Michael's family owns a caravan park in town, and is unable to find labour to help him maintain the various properties he keeps in his tourism business.

Unable to attract a skilled carpenter, Michael – a business owner with no formal education in the trades – has taken the initiative to learn carpentry as an apprentice alongside running his own business. He felt that it was more realistic for him to take the several years to learn carpentry than to find a worker on the open market who was able to provide these services.

Michael, a Broken Hill business owner who has taken up carpentry to address his business' needs.

Case Study: 2022 Floods Impact Labour Supply & Council Resources



FLOOD DAMAGE ON A REGIONAL NSW ROAD.

PHOTO: EDWARD CAVANOUGH.

For much of 2022, regional NSW communities suffered unprecedented and consistent flooding events.

Across the state, river systems swelled after a third consecutive year of increased rain saw water levels rise, and the land remained soaked, limiting the amount of water that was draining into river systems.

By November 2022, when field work for this project was undertaken, much of the state was in a state of emergency. Devastating flash flooding events in Eugowra led to fatalities and the loss of hundreds of properties. Elsewhere in the state, damaged roads wreaked havoc on communities, and led to the Country Mayor's Association of NSW calling for a 'State of Roads Emergency', to reflect the extent of the damage.

The 2022 floods' impact on labour supply in regional NSW is twofold.

Firstly, the clean-up from the floods is significant. Hundreds of properties either need to be repaired or rebuilt, which is straining an already limited supply of skilled tradespeople in regional communities.

This is also seeing prices for these skilled trades increase in regional NSW, furthering the cost



ROAD CLOSURES IN GUNNEDAH, NSW.

PHOTO: EDWARD CAVANOUGH.

of living pressures many communities are experiencing.

The damage to roads is also acute, with the extent of roads repairs far exceeding the capacity for most local governments to fund the repairs, and to find the workers and machinery that are equipped to perform this essential maintenance.

One Mayor told researchers that they expected the damage to roads from this flooding event to take at least 10 years to fully repair, if indeed they are ever fully repaired.

Secondly, the frequency of extreme weather events in regional NSW is limiting the attractiveness of certain higher-risk communities in the state for prospective employees.

The disruptive nature of 2022's extreme weather events have, in certain areas, curtailed the liveability perceptions for some future workers.

The quality and nature of the economic recovery in the most affected communities will continue to be a major determinant of the ability of communities to attract labour to the regions in 2023 and beyond.

Case Study: Moama Labour Shortage Compounded by Disaster



TERRY DODDS, OF MOAMA.

PHOTO: EDWARD CAVANOUGH

Moama is a NSW town on the Murray River, situated close to the Victorian town of Echunga. Moama is a popular holiday hotspot, with travellers largely from the Victorian market visiting the town to engage in water activities along the river, and to enjoy hospitality venues such as breweries and wineries. Moama is, however, acutely challenged by an inability to attract skilled professionals into its local government sector.

Terry Dodds is the Chief Executive Office of Murray Shire Council. It is a vast council area, stretching from Moama in the southeast, west to Moulamein. It includes the townships of Tooleybuck, Jerilderie, and Deniliquin — each popular thoroughfares for interstate transportation.

When Dodds spoke to researchers, he was in the midst of dealing with the ongoing flood crisis.

“We’ve got 39 roads we can’t even see underwater”, he says.

But for Dodds, the flood crisis of 2022 was just the latest in a series of challenges facing the region. Tourism numbers dramatically declined during the COVID-19 period, particularly with the extensive lockdowns in Melbourne, where many travellers to Moama originated. But now, Dodds



FLOODING ON THE BANKS OF THE MURRAY.

PHOTO: EDWARD CAVANOUGH.

is unable to find workers to meet the immediate demands placed upon the council.

Dodds is unable to find skilled workers to provide water engineering and flood mitigation advice, for example — he notes that his most skilled workers in this regard are nearing retirement, with no replacement in site. For Dodds, one of the most acute threats to the council’s ability to provide the services it requires is the lack of strategic planning capacity.

Dodds says his council has taken remarkable efforts to attract workers, including booking and purchasing property specific for prospective workers to live in.

He believes the state and federal government needs to do more to attract workers to region through tax incentives, such as broadening the use of HECS forgiveness to attract younger workers into the regions in any number of industries.

PART THREE:

FORECASTING LABOUR DEMAND IN REGIONAL NSW

KEY POINTS

- 1** Communities across New South Wales will be challenged by an increasing number of job vacancies in a diverse suite of professions over the next five years.
- 2** A minority of regions have already seen the peak of their forecast skills shortages, but will continue to be impacted.
- 3** Individual communities are experiencing their own distinct labour market challenges, which should be addressed strategically and in concert with Local Governments.

While there are common drivers of the NSW regional skills crisis, the manifestation of this crisis is often different in certain regions and communities. This section of the report utilises a novel forecasting method designed to anticipate job vacancies by skill sets looking forward to 2027.

Job vacancy data provides a window into employer needs

Job vacancy data enables an almost real-time assessment of demand for skills in the labour market. While not every worker is sourced through formal job advertisements, job ads data does enable researchers to take the pulse of the labour market, and to understand what industries most in need of workers are.





Using this metric, the below forecasts anticipate live job advertisements by SA4 regional areas of NSW to 2027. Separate models were estimated for each region and occupation utilising quarterly data from 2010 and 2022 from the National Skills Commission and various Australian Bureau of Statistics sources. Forecasting models were developed to incorporate employment trends in each occupation and region, unemployment and population in the region, the proportion of older workers in each occupation and past trends and patterns in each employment vacancy series. As with all similar models, the forecasts to 2027 are based on assumptions that past relationships and trends continue for another 5 years so should be interpreted with some caution.

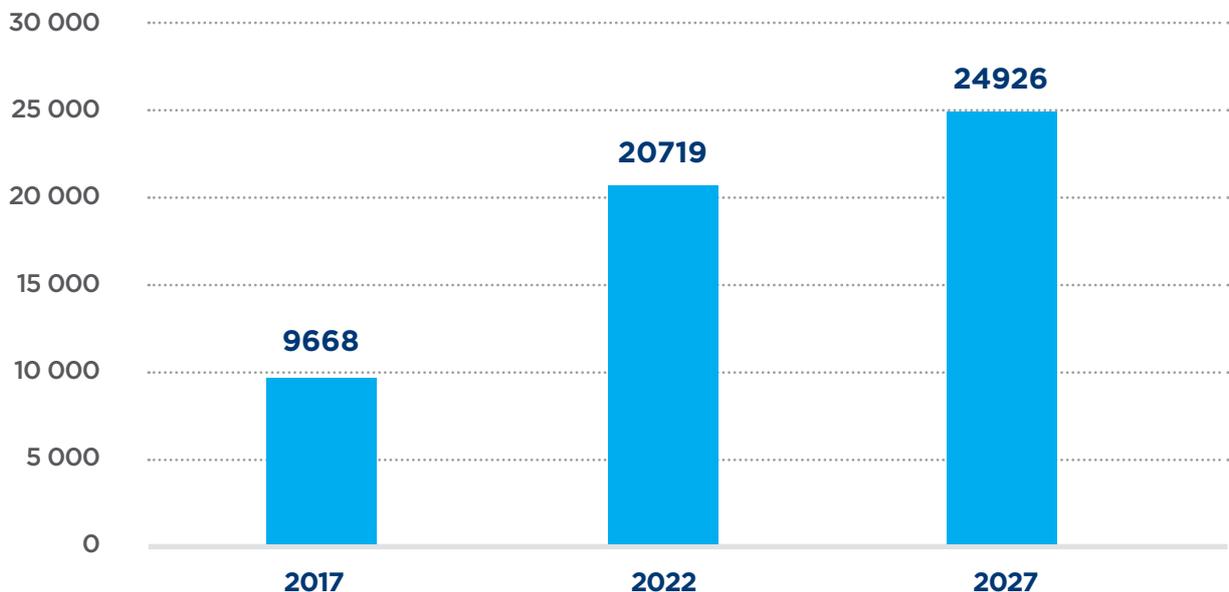
The data illustrates the diversity of needs in each region. Overall, it is clear that the regional skills crisis will grow more acute over the coming years. But in each region, this looks different.

Some regions will in fact see their skills crisis alleviate by 2027, while others will grow more severe. Certain regions will see a rapid increase in demand for certain types of work, where demand for other skills will taper or normalise. These estimates factor in a range of variables, including the current educational attainment in each region, population and demographic forecasts, and broader economic analyses to determine demand for certain types of services.

At a state-wide level, the skills crisis is projected to worsen by 2027

From a state-wide perspective, quarterly advertised jobs vacancies will continue to grow through to 2027. As of Q1 2022, there were over 20,000 quarterly jobs vacancies left unfilled across regional New South Wales; this is forecast to grow to near 25,000 by 2027.

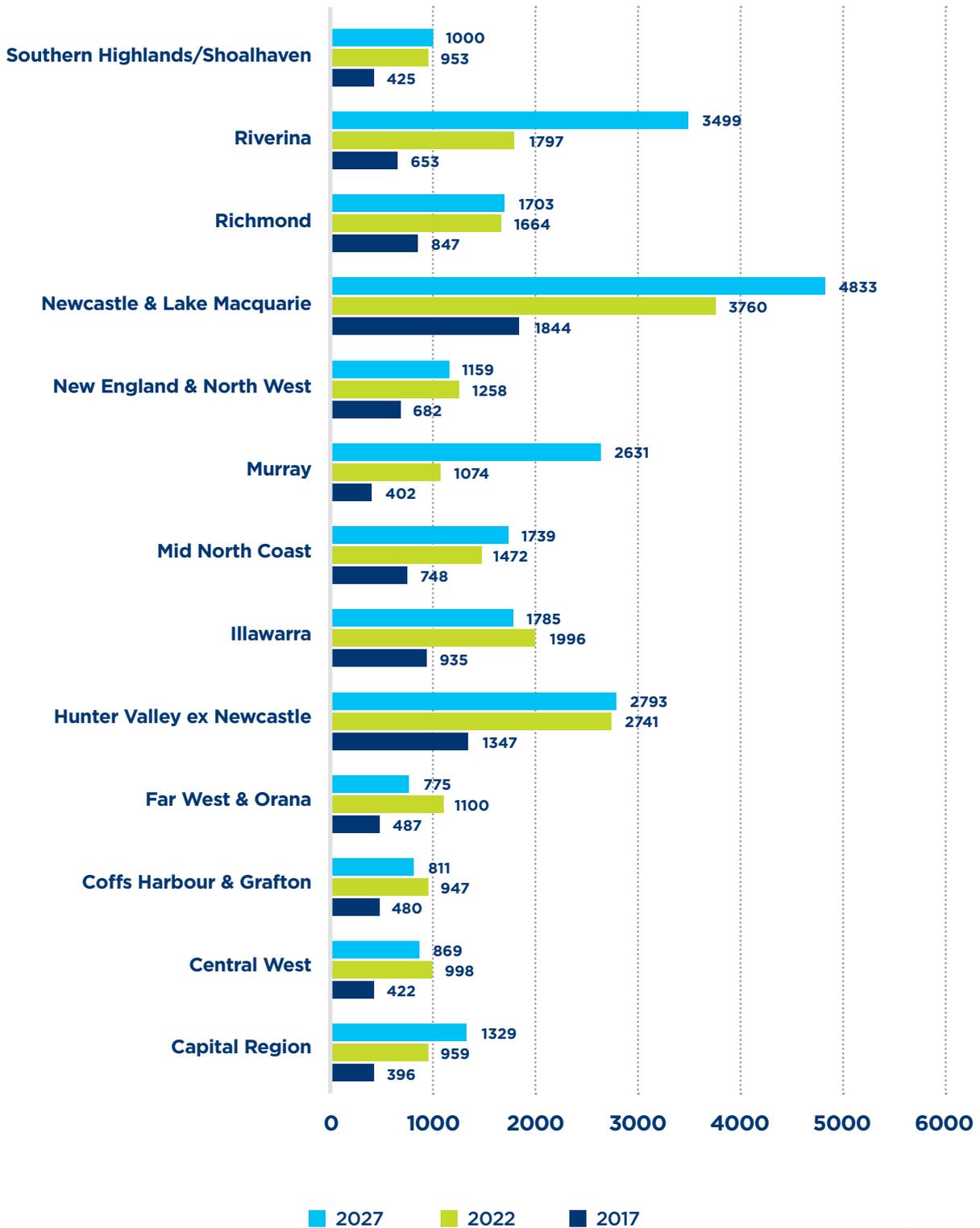
FIGURE 3.1 FORECASTING TOTAL JOB VACANCIES PER QUARTER, REGIONAL NSW, ALL SKILLS.



Source: Author analysis.

The pace of growth in job vacancies will differ by region. Some regions, including the Illawarra, Coffs Harbour & Grafton, and the Far West/Orana region, are expected to see overall jobs vacancies reduce through to 2027. These regions are exceptions, however, with many NSW regions projected to see a significant increase in demand for labour by 2027.

FIGURE 3.2
 FORECASTING TOTAL JOB VACANCIES PER QUARTER, REGIONAL NSW
 BY REGIONAL AREA, ALL SKILLS.



Source: Author analysis.



Breaking down skills demand by individual region

Regions are defined by the Australian Bureau of Statistics (ABS) using “Statistical Areas”. The most common regional level reported by the ABS in their labour force statistics is the Statistical Area 4 (SA4). SA4 generally encompass a population of over 100,000 people and have been designed to represent labour markets of large regional cities or the amalgamation of smaller regional labour markets based on travel to work interactions as well as industry and regional similarities (ABS 2021). There are thirteen SA4 regions in New South Wales, as displayed below.

FIGURE 3.3 NSW BY SA4 AREAS.



Many regional NSW communities are ‘Skills Deserts’ – or will be by 2027

The data that follows demonstrates how in certain regional areas, the skills and labour shortages seen today are only set to worsen. As this report has outlined, this dynamic compounds the economic challenges facing communities: as skills shortages become more acute, economic activity wanes more broadly; many residents re-locate to attain the services they need; small businesses suffer; and a declining local population can act as a deterrent from state or federal government investment into resuscitating a community that may be

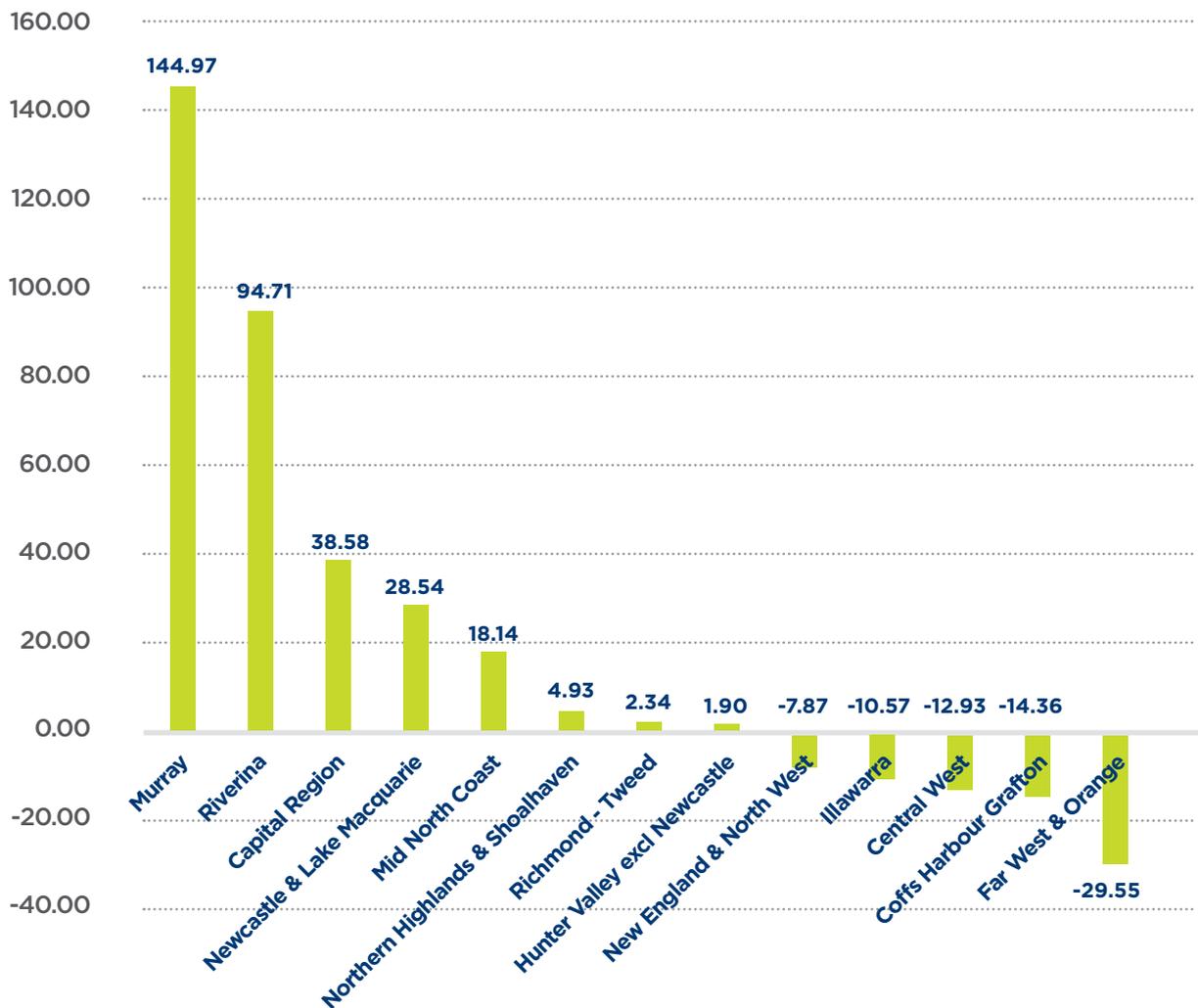
perceived as being in irreversible decline. In essence, the emergence of acute and sustained skills and labour shortages act as a catalyst for community decline. These sustained skills and labour shortages can be viewed as a barometer into the economic health of these regional areas.

This report advances the concept of **'Skills Deserts'**: regional areas where skills and labour shortages have become entrenched over a period of time and are forecast to worsen. The precise attributes of a Skills Desert area could be further explored by policymakers, however, the key attributes of such an area could include

longitudinal data on jobs vacancies, educational attainment, employment, population and demographic shifts, educational opportunities, or access to essential services.

The below graph illustrates the percentage change in jobs vacancies between 2022 and 2027 in regional areas of New South Wales. It demonstrates that, in certain areas, jobs vacancies will dramatically increase, whereas demand for new jobs may decrease in other areas. In the Murray and Riverina districts, this growth is forecast to be near or over 100 percent.

FIGURE 3.4 PERCENTAGE CHANGE IN JOBS VACANCIES TO 2027 BY SA4 REGION OF NSW.



Source: Author analysis.



A dramatic reduction in job vacancies might not always reflect a healthy labour market correction. The data for Far West and Orana region, for example, which includes Broken Hill, likely suggests that, due to demographic reasons, overall economic demand is forecast to reduce, and therefore, there is less demand for labour.

The remainder of this section of the report presents the findings for each regional SA4 area of New South Wales:

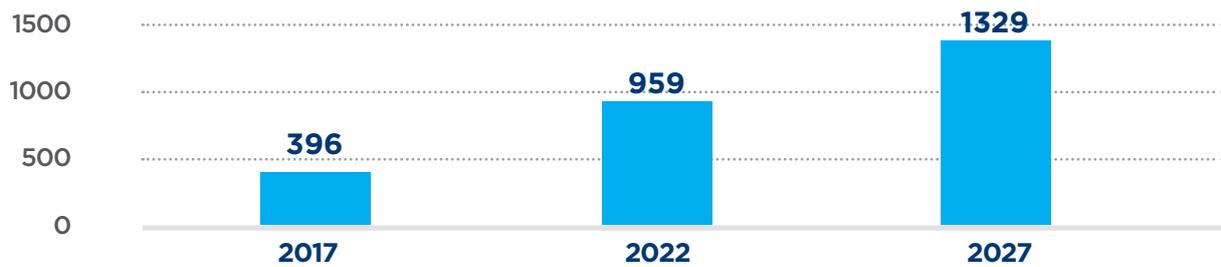
1. Capital Region Skills Shortage Projection

TABLE 3.1 KEY LABOUR MARKET STATISTICS, CAPITAL REGION.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Capital region	119.3 (+12.9)	62.0 (+4.2)	4.0 (-5.1)	3.2 (-4.7)	192.4 (+8.3)

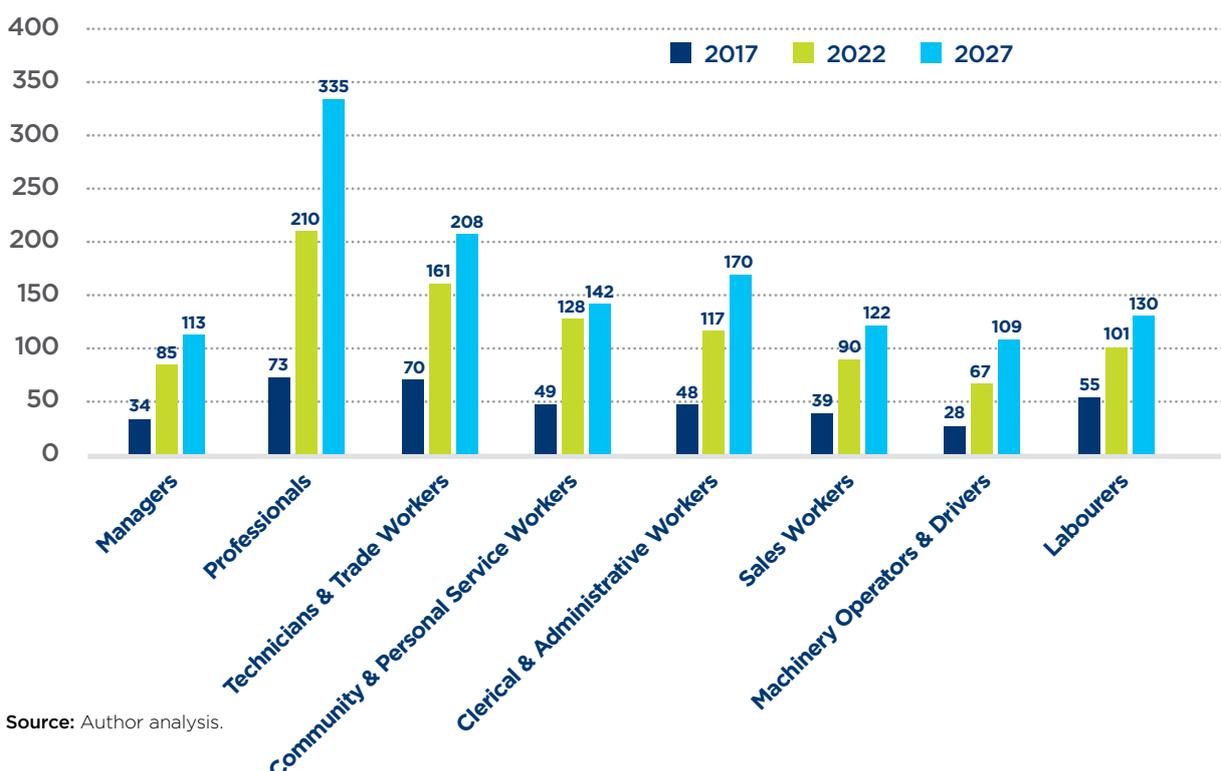
Source: Author analysis.

FIGURE 3.5 JOBS VACANCIES PER QUARTER, CAPITAL REGION.



Source: Author analysis.

FIGURE 3.6 JOBS VACANCIES BY SKILL AREA PER QUARTER, CAPITAL REGION.



Source: Author analysis.

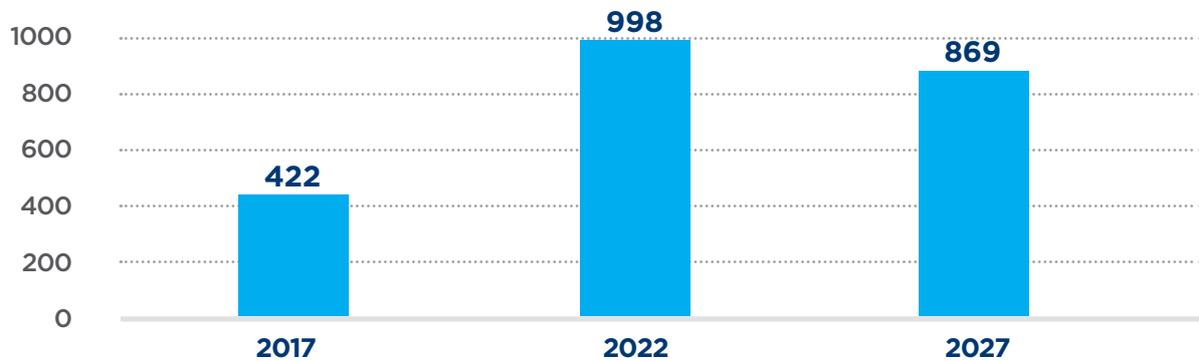
2. Central West Skills Shortage Projection

TABLE 3.2 KEY LABOUR MARKET STATISTICS, CENTRAL WEST REGION.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Central West	109.2 (+6.6)	64.1 (+3.4)	3.7 (-1.4)	3.2 (-1.4)	170.2 (+1.4)

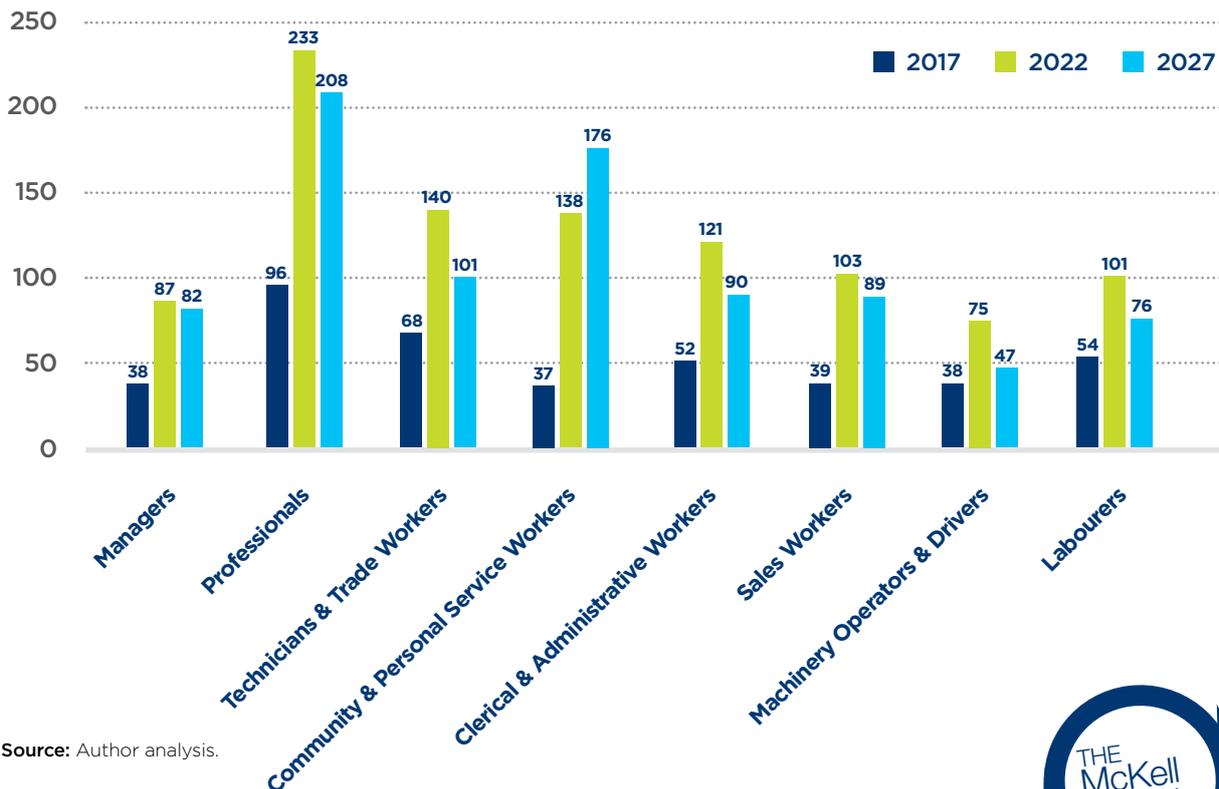
Source: Author analysis.

FIGURE 3.7 JOBS VACANCIES PER QUARTER, CENTRAL WEST.



Source: Author analysis.

FIGURE 3.8 JOBS VACANCIES BY SKILL AREA PER QUARTER, CENTRAL WEST.



Source: Author analysis.



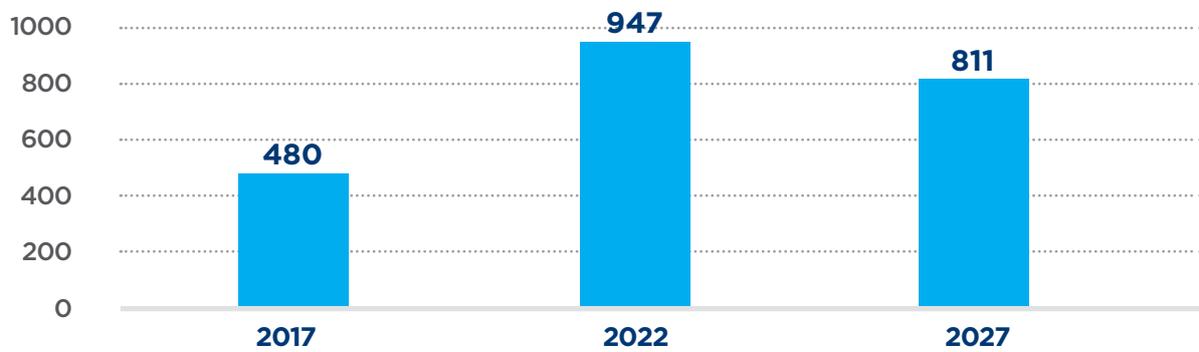
3. Coffs Harbour & Grafton Skills Shortage Projection

TABLE 3.3 KEY LABOUR MARKET STATISTICS, COFFS HARBOUR & GRAFTON.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Coffs Harbour - Grafton	60.9 (+3.5)	52.1 (+2.2)	1.4 (-3.9)	2.2 (-6.3)	116.9 (+1.9)

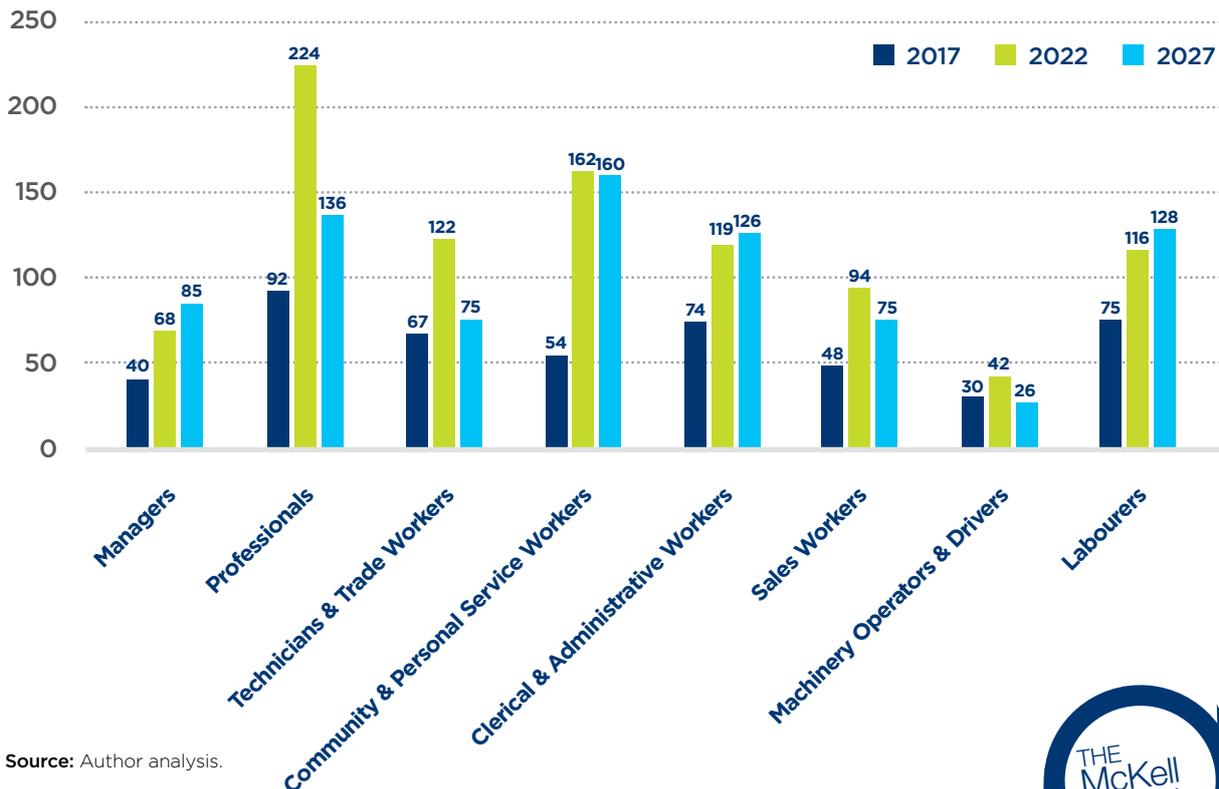
Source: Author analysis.

FIGURE 3.9 JOBS VACANCIES PER QUARTER, COFFS HARBOUR & GRAFTON.



Source: Author analysis.

FIGURE 3.10 JOBS VACANCIES BY SKILL AREA PER QUARTER, COFFS HARBOUR & GRAFTON.



Source: Author analysis.



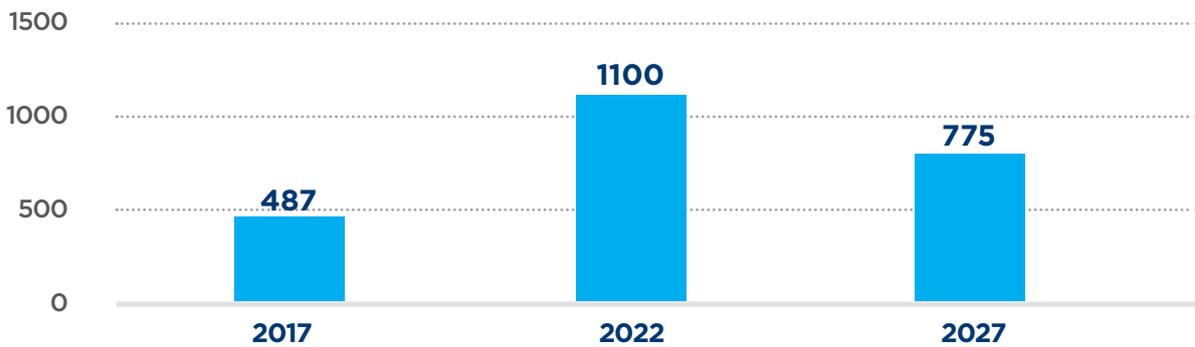
4. Far West & Orana Skills Shortage Projection

TABLE 3.4 KEY LABOUR MARKET STATISTICS, FAR WEST & ORANA.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Far West & Orana	58.8 (+8.9)	65.0 (+11.2)	3.3 (+0.6)	5.3 (+0.3)	90.4 (-2.4)

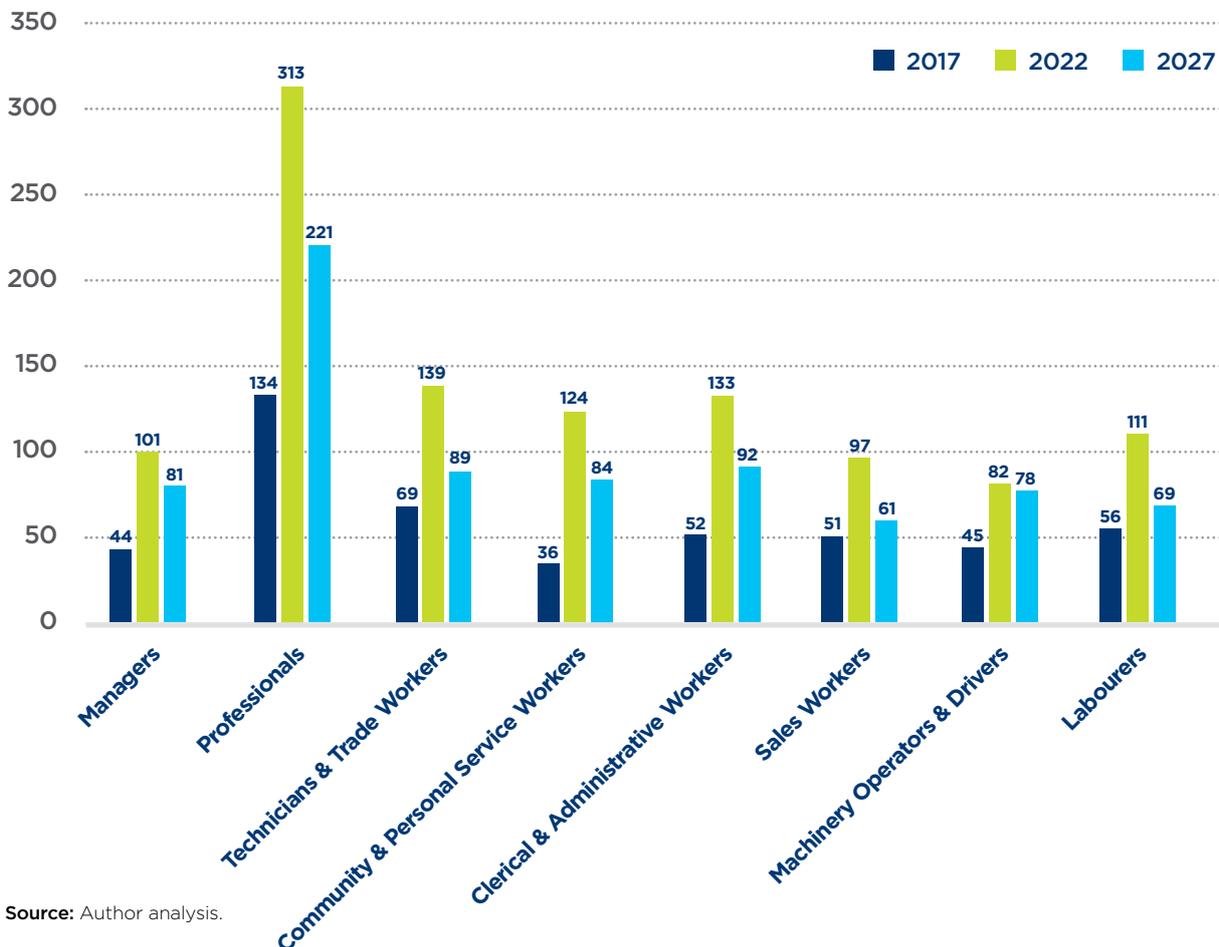
Source: Author analysis.

FIGURE 3.11 JOBS VACANCIES PER QUARTER, FAR WEST & ORANA.



Source: Author analysis.

FIGURE 3.12 JOBS VACANCIES BY SKILL AREA PER QUARTER, FAR WEST & ORANA.



Source: Author analysis.

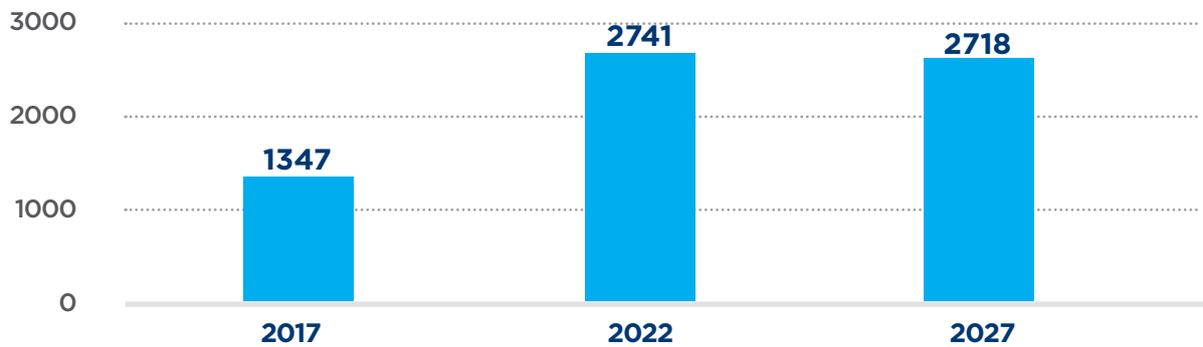
5. Hunter Valley Skills Shortage Projection

TABLE 3.5 KEY LABOUR MARKET STATISTICS, HUNTER VALLEY.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Hunter Valley excl Newcastle	130.2 (+2.6)	56.2 (-3.3)	6.3 (+0.6)	4.6 (+0.4)	231.9 (+17.0)

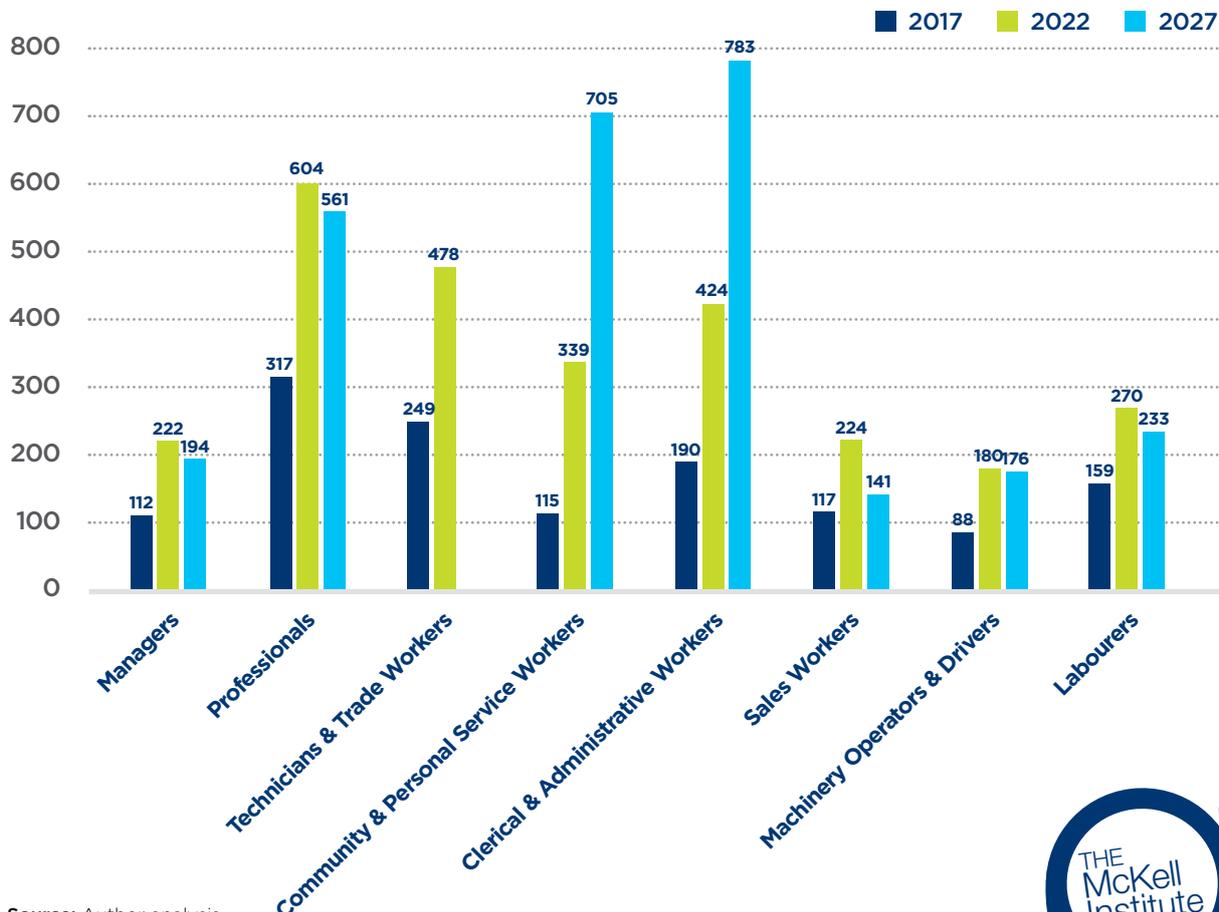
Source: Author analysis.

FIGURE 3.13 JOBS VACANCIES PER QUARTER, HUNTER VALLEY.



Source: Author analysis.

FIGURE 3.14 JOBS VACANCIES BY SKILL AREA PER QUARTER, HUNTER VALLEY.



Source: Author analysis.



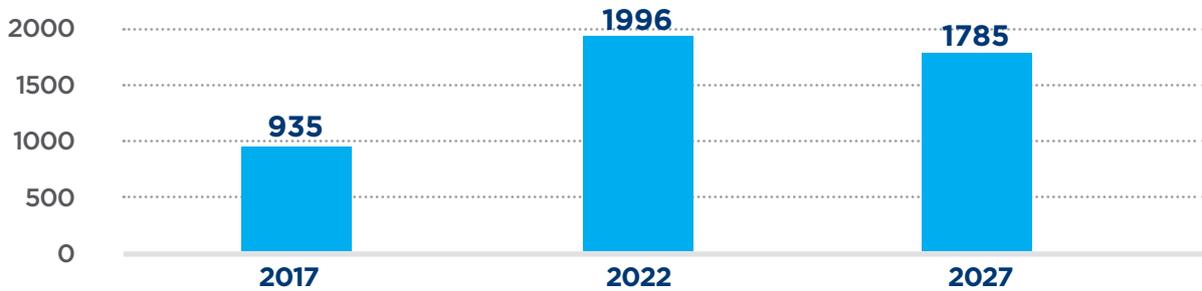
6. Illawarra Skills Shortage Projection

TABLE 3.6 KEY LABOUR MARKET STATISTICS, ILLAWARRA.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Illawarra	172.8 (+27.7)	65.7 (+7.6)	4.0 (-4.6)	2.3 (-3.4)	263.2 (+13.0)

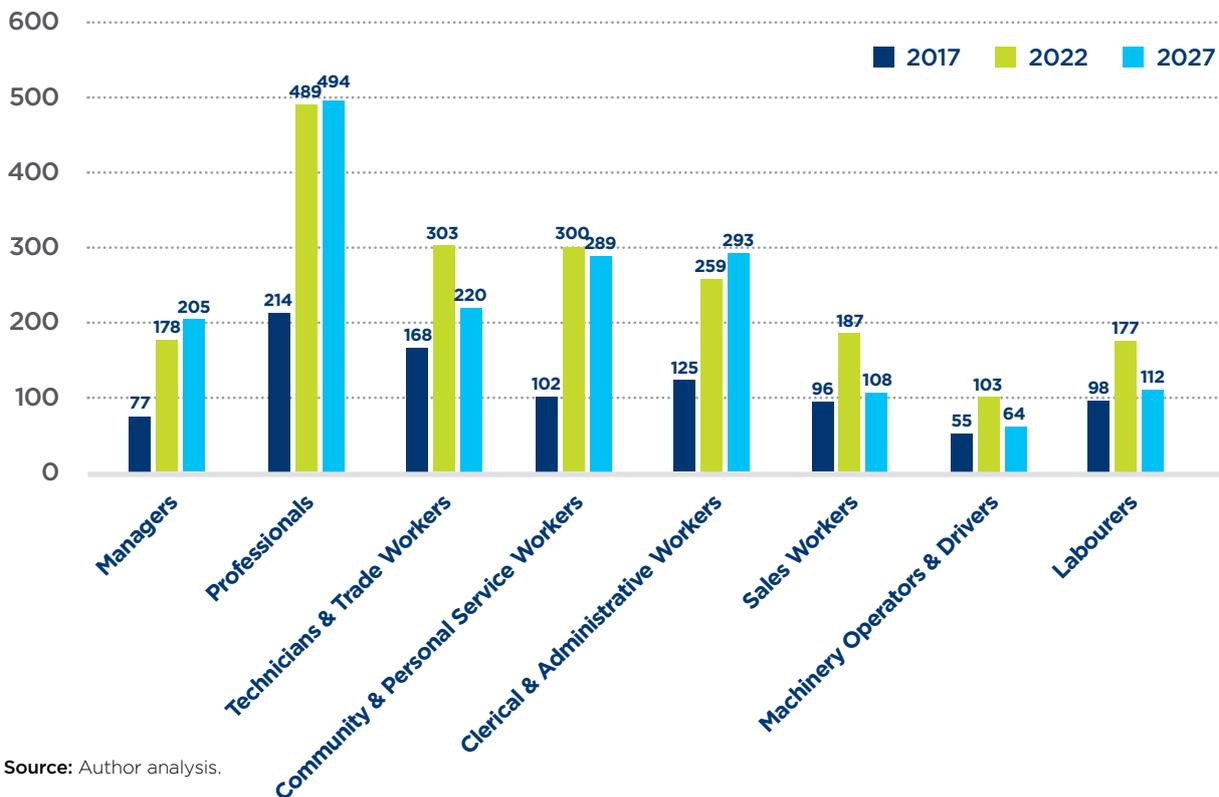
Source: Author analysis.

FIGURE 3.15 JOBS VACANCIES PER QUARTER, ILLAWARRA.



Source: Author analysis.

FIGURE 3.16 JOBS VACANCIES BY SKILL AREA PER QUARTER, ILLAWARRA.



Source: Author analysis.

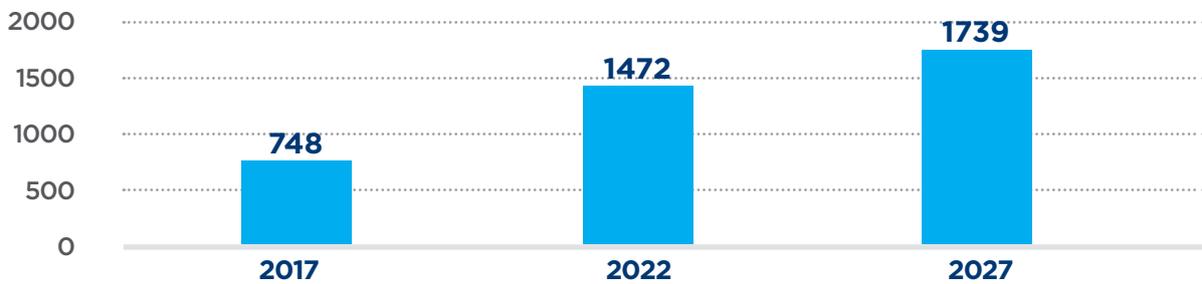
7. Mid North Coast Skills Shortage Projection

TABLE 3.7 KEY LABOUR MARKET STATISTICS, MID NORTH COAST.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Mid North Coast	78.0 (-15.0)	41.1 (-10.0)	1.8 (-6.6)	2.3 (-6.0)	189.5 (+7.6)

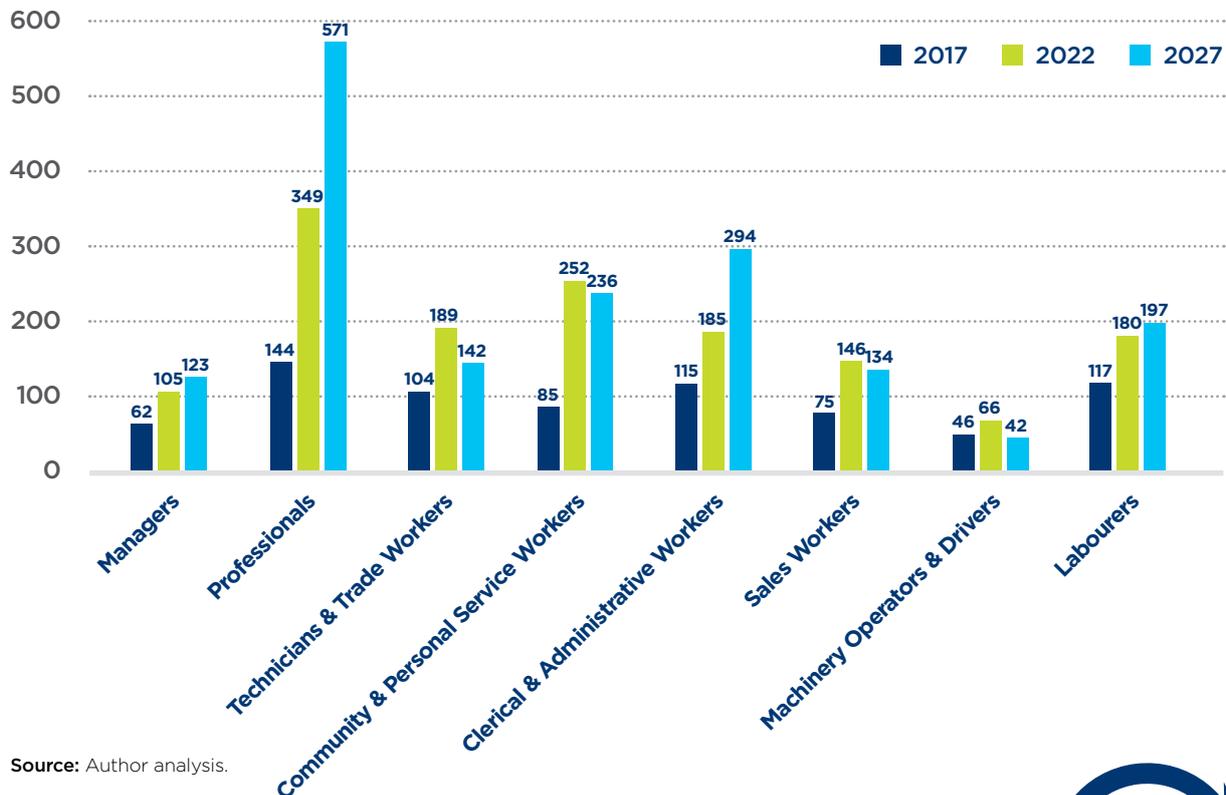
Source: Author analysis.

FIGURE 3.17 JOBS VACANCIES PER QUARTER, MID NORTH COAST.



Source: Author analysis.

FIGURE 3.18 JOBS VACANCIES BY SKILL AREA PER QUARTER, MID NORTH COAST.



Source: Author analysis.







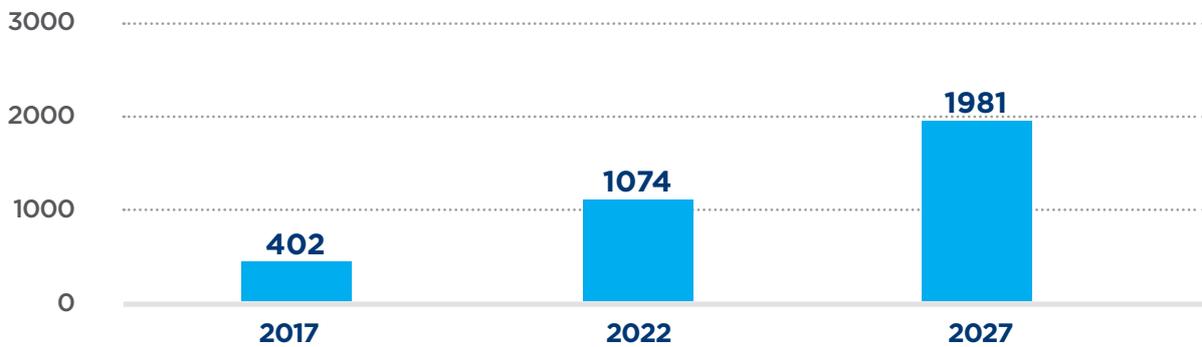
8. Murray Skills Shortage Projection

TABLE 3.8 KEY LABOUR MARKET STATISTICS, MURRAY.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Murray	61.7 (+14.7)	61.7 (+12.9)	1.8 (-1.6)	2.9 (-3.9)	99.9 (+3.6)

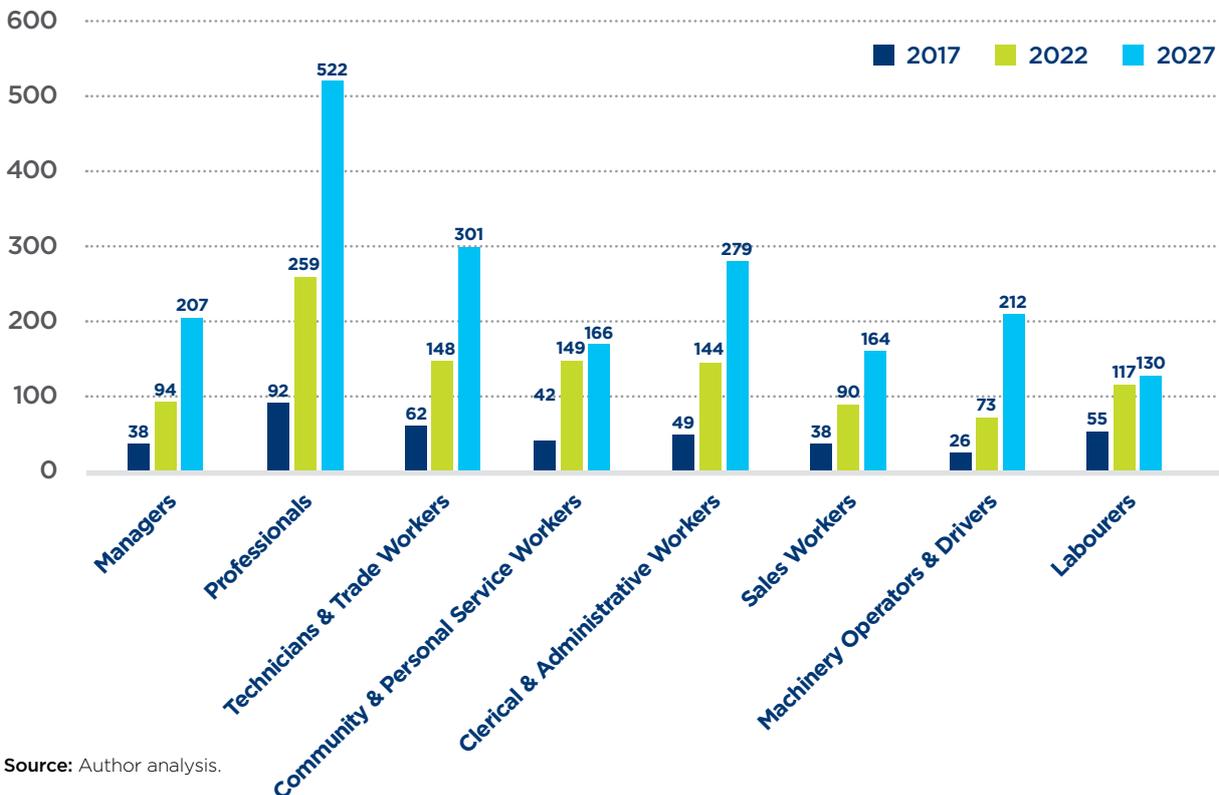
Source: Author analysis.

FIGURE 3.19 JOBS VACANCIES PER QUARTER, MURRAY.



Source: Author analysis.

FIGURE 3.20 JOBS VACANCIES BY SKILL AREA PER QUARTER, MURRAY.



Source: Author analysis.

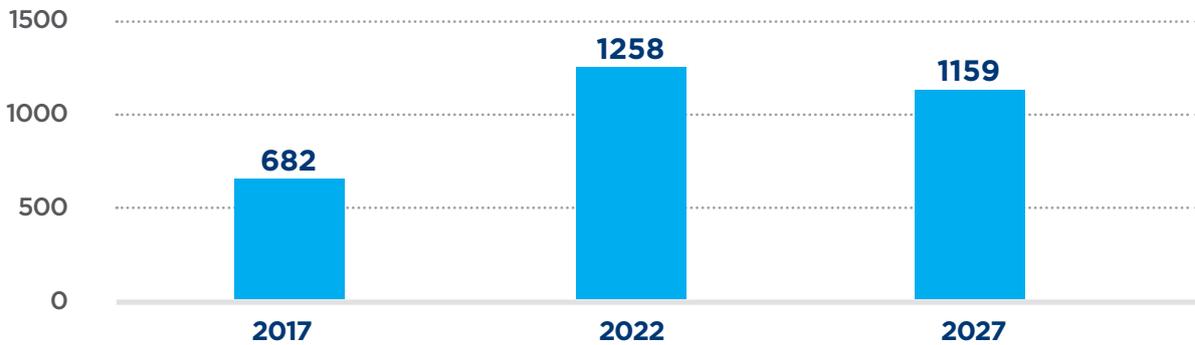
9. New England & Northwest Skills Shortage Projection

TABLE 3.9 KEY LABOUR MARKET STATISTICS, NEW ENGLAND & NORTH WEST.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
New England & North West	85.2 (+6.6)	57.8 (+5.1)	4.6 (-1.1)	5.1 (-1.6)	147.3 (-1.7)

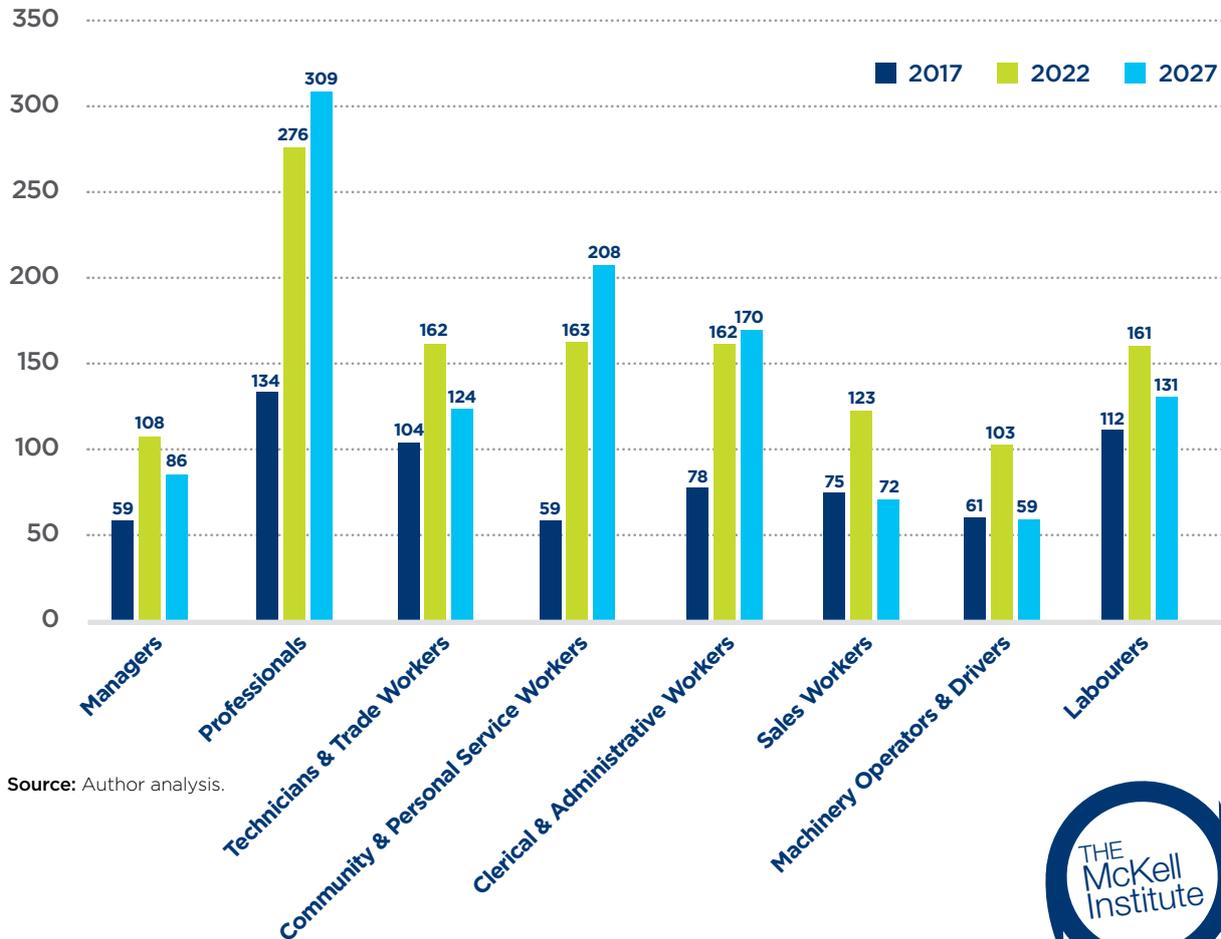
Source: Author analysis.

FIGURE 3.21 JOBS VACANCIES PER QUARTER, NEW ENGLAND & NORTH WEST.



Source: Author analysis.

FIGURE 3.22 JOBS VACANCIES BY SKILL AREA PER QUARTER, NEW ENGLAND & NORTH WEST



Source: Author analysis.



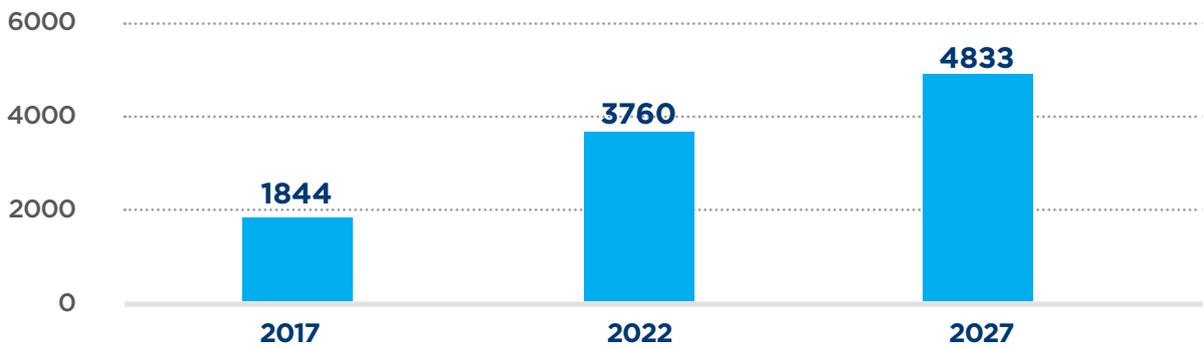
10. Newcastle & Lake Macquarie Skills Shortage Projection

TABLE 3.11 KEY LABOUR MARKET STATISTICS, NEWCASTLE & LAKE MACQUARIE.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Newcastle & Lake Macquarie	205.7 (+24.1)	65.2 (+5.5)	5.6 (-3.2)	2.6 (-1.9)	315.5 (+11.2)

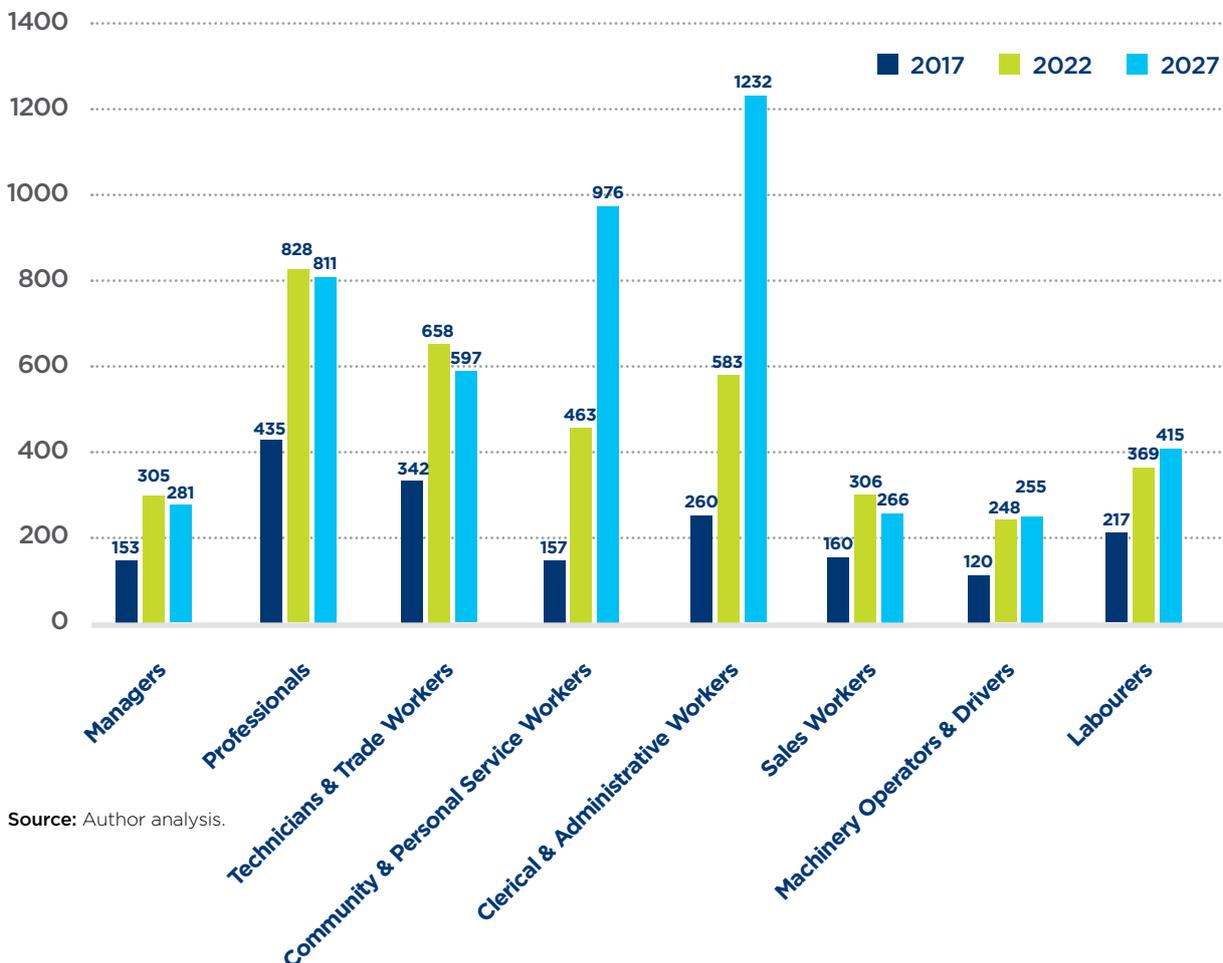
Source: Author analysis.

FIGURE 3.23 JOBS VACANCIES PER QUARTER, NEWCASTLE & LAKE MACQUARIE.



Source: Author analysis.

FIGURE 3.24 JOBS VACANCIES BY SKILL AREA PER QUARTER, NEWCASTLE & LAKE MACQUARIE.



Source: Author analysis.

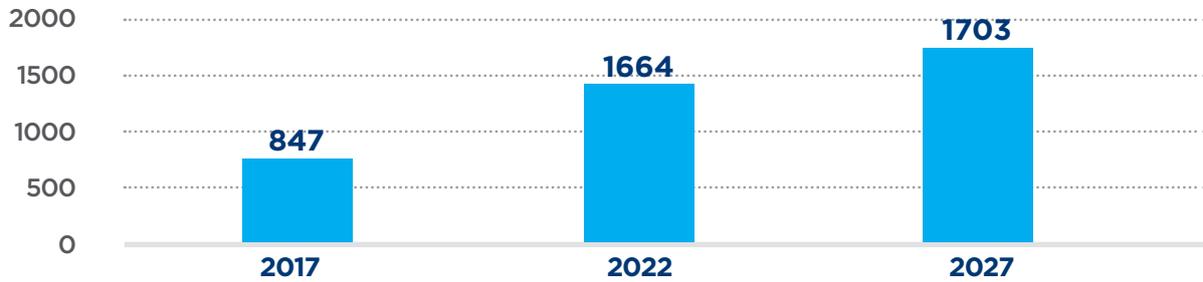
11. Richmond & Tweed Skills Shortage Projection

TABLE 3.12 KEY LABOUR MARKET STATISTICS, RICHMOND & TWEED.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Richmond - Tweed	136.5 (+35.0)	64.0 (+14.5)	1.2 (-4.0)	0.9 (-4.0)	213.3 (+8.0)

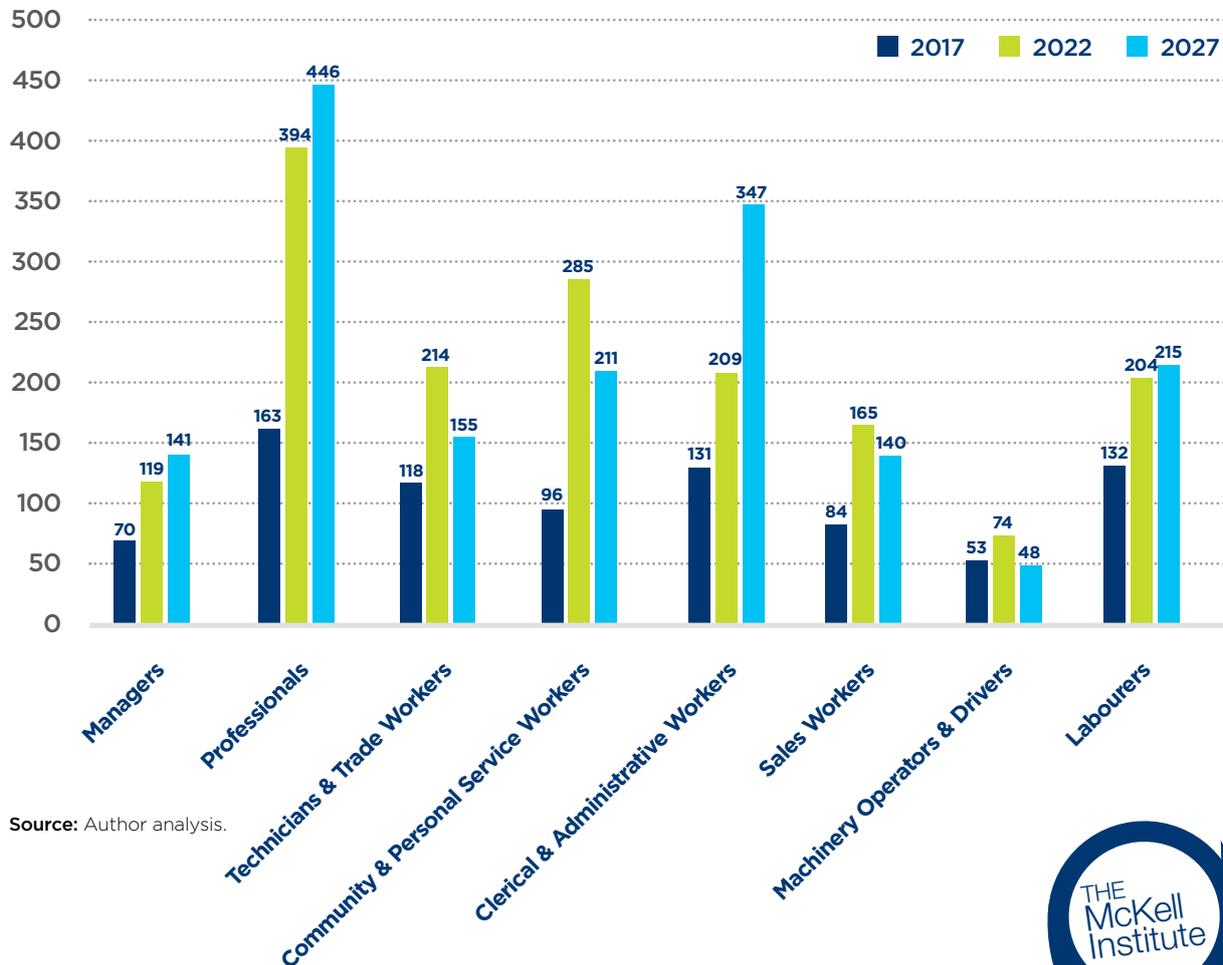
Source: Author analysis.

FIGURE 3.25 JOBS VACANCIES PER QUARTER, RICHMOND & TWEED.



Source: Author analysis.

FIGURE 3.26 JOBS VACANCIES BY SKILL AREA PER QUARTER, RICHMOND & TWEED.



Source: Author analysis.



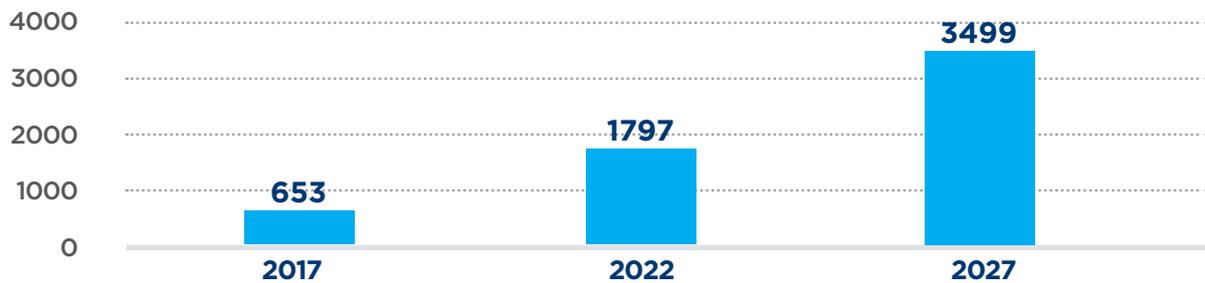
12. Riverina Skills Shortage Projection

TABLE 3.13 KEY LABOUR MARKET STATISTICS, RIVERINA.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Riverina	79.8 (+2.0)	62.6 (+1.2)	3.0 (+2.0)	3.6 (+2.3)	127.5 (+0.8)

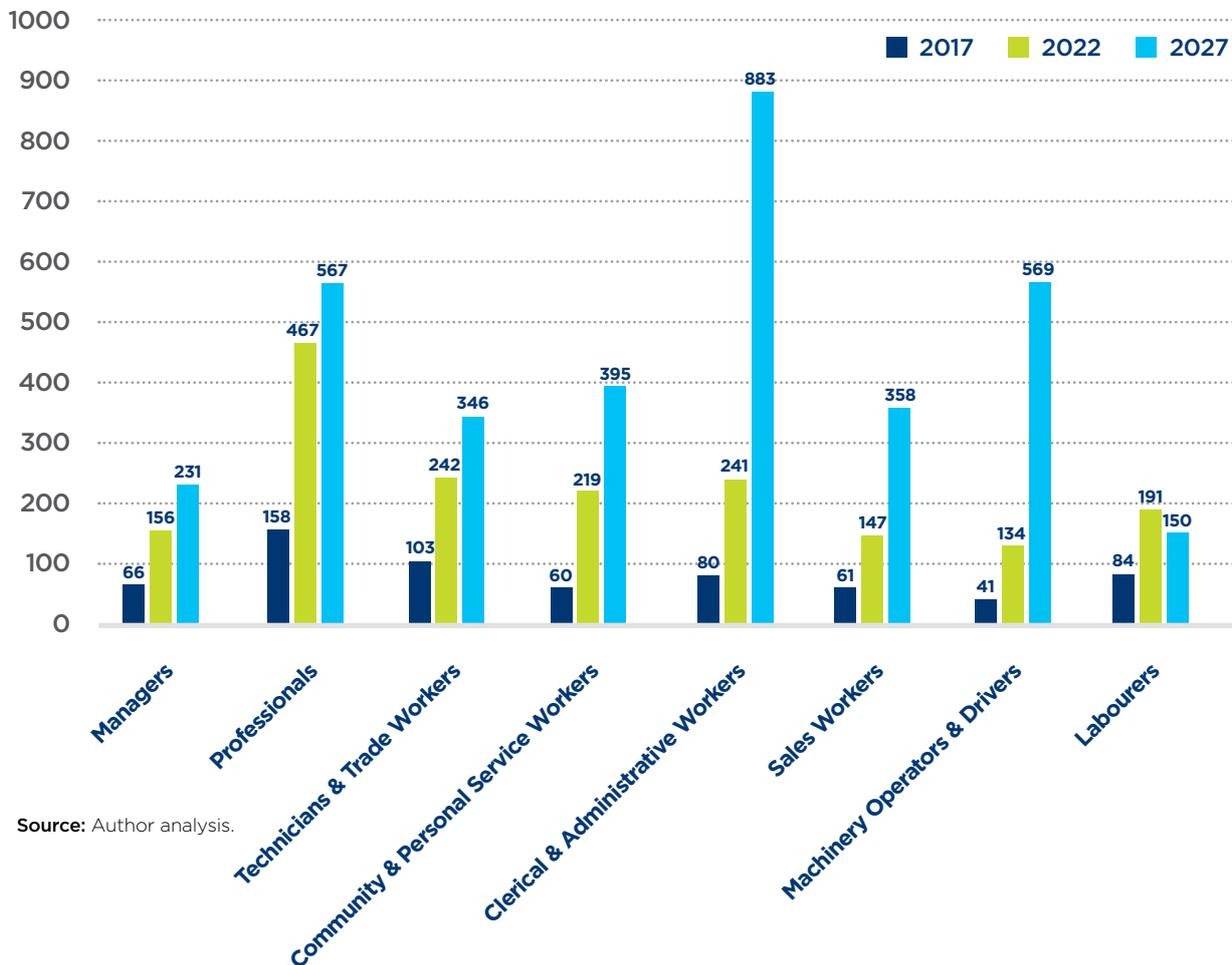
Source: Author analysis.

FIGURE 3.27 JOBS VACANCIES PER QUARTER, RIVERINA.



Source: Author analysis.

FIGURE 3.28 JOBS VACANCIES BY SKILL AREA PER QUARTER, RIVERINA.



Source: Author analysis.

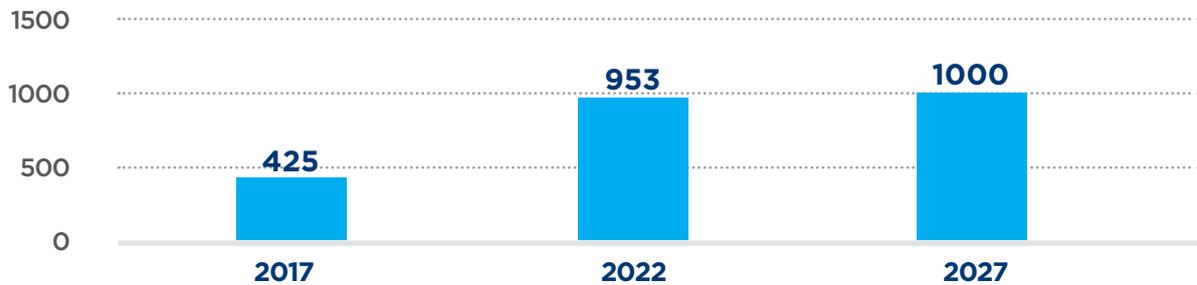
13. Southern Highlands & Shoalhaven Skills Shortage Projection

TABLE 3.14 KEY LABOUR MARKET STATISTICS, SOUTHERN HIGHLANDS & SHOALHAVEN.

SA4 region	Employment ('000)	Employment to population rate (%)	Unemployed ('000)	Unemployment rate (%)	Population
Southern Highlands & Shoalhaven	71.9 (+18.5)	53.9 (+11.3)	0.0 (-3.4)	0.0 (-5.9)	133.3 (+8.0)

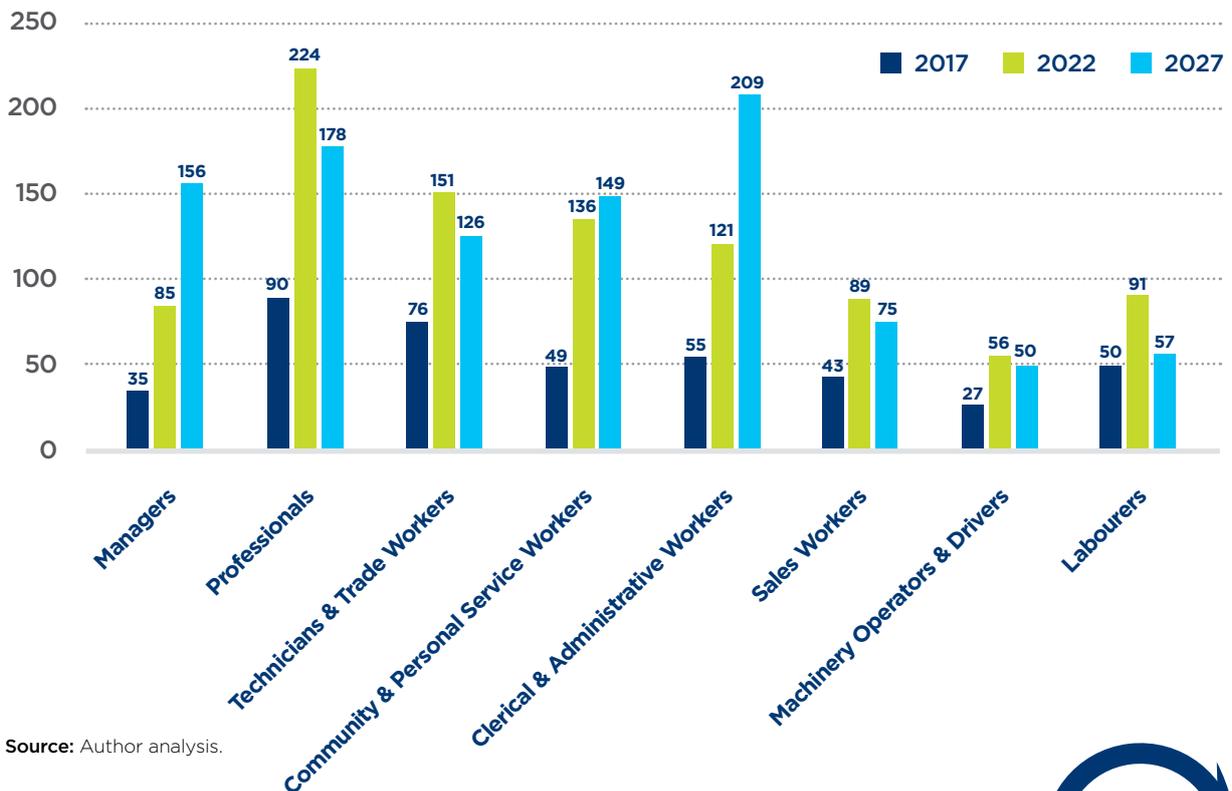
Source: Author analysis.

FIGURE 3.29 JOBS VACANCIES PER QUARTER, SOUTHERN HIGHLANDS, SHOALHAVEN.



Source: Author analysis.

FIGURE 3.30 JOBS VACANCIES BY SKILL AREA PER QUARTER, SOUTHERN HIGHLANDS & SHOALHAVEN.



Source: Author analysis.



RECOMMENDATIONS FOR CONSIDERATION

ACTION AREA 1 LOCALISING SKILLS POLICY

RECOMMENDATION 1

Developing Community-Level Skills Forecasting

The NSW Government should explore ways to generate more detailed and localised skills mapping and forecasting, specific to each LGA in New South Wales.

This report has attempted to forecast future skills needs at a Statistical Area 4 (SA4) level, considering regional difference in NSW. In order to adequately target investments to alleviate localised skills shortages, however, the NSW Government should develop a capacity to forecast skills deficits on a more granular level — either at a Local Government Area level, or below. By developing this capacity, community-level interventions can be better targeted.

RECOMMENDATION 2

Establishing A ‘Skills-Desert’ Investment & Training Trigger

With better localised skills data, the NSW Government should develop the capacity to identify LGA-level ‘skills deserts’, and establish a trigger that mandates targeted state-government investments once localised skills shortages reach critical levels.

When a community begins to see entrenched skills deficits, a decline in that community’s economic wellbeing is to be expected. The NSW Government should consider establishing an **Investment & Training Trigger**, which would see resources allocated towards specific communities for a prescribed period once they’re declared a ‘Skills Desert’. Once categorised as a Skills Desert, a process could commence that focuses on alleviating community-identified roadblocks to worker retention and attraction; allocates training resources specific to identified community needs; and provides state-government incentives to worker retention and relocation to that prescribed Skills Desert Area.

ACTION AREA 2 INCENTIVISING WORKER RETENTION & RELOCATION

RECOMMENDATION 3

Expand Worker Tax Concessions

The NSW Government and the Commonwealth Government should consider broadening access to HECS relief and income-tax concessions for workers relocating to skills-deficit areas

A long-standing approach to alleviating regional labour and skills shortages has been establishing financial incentives to attract key workers to regional areas. As recently as June 2022, the NSW Government announced an \$883 million package designed to provide HECS relief for healthcare workers relocating to regional areas. While there is some evidence that financial relocation incentives have mixed effectiveness, other research has demonstrated that such interventions can work when targeted towards early-career professionals or graduates — particularly those looking to start a family and a career, or purchase a home.

While no single intervention is a silver bullet for regional skilled labour shortages, such incentives do provide a part of the policy mix. The NSW Government should consider expanding such concessions and incentives towards workers in other critical skills areas in demand.

RECOMMENDATION 4

Introduce a 'Cost of Living Guarantee' for Key Workers in Designated 'Skills Desert' Areas, Which Would See Wages Pegged to Inflation for a Period of Time

The NSW State Government is currently unwilling to pair public sector wage increases with inflation. Doing so in Skills Desert Areas for a prescribed period would act as a strong incentive to relocate to regional communities or retain existing regional workers.

As inflation has increased considerably since 2021, the real-wages of most frontline workers in New South Wales have gone backwards. With sustained inflation over 5 per cent, and most government pay offers much less than that, this trend is likely to continue for several years to come. While this dynamic is confronting, it also presents an opportunity for government to consider introducing a powerful financial incentive for those who relocate to regional areas, or retrain to meet specific skills shortages, in Skills Desert Areas.

In such areas, the NSW Government could consider the introduction of a Cost of Living Guarantee for workers relocating, retaining, or retraining to meet demand, in this identified areas.

The **Cost of Living Guarantee** would ensure that these workers' wages would be pegged to inflation for a prescribed period of time — perhaps 5 to 10 years. The specifics around occupation and duration of the incentive could be determined by the acuity of the forecast skills shortage.

The consequence of this policy, for the workers who choose to adopt it, would be that irrespective of increases in consumer prices during their period in the Skills Desert Area, their wages will always match these increased prices. While on a macro scale, this policy could enhance inflationary pressure, if targeted appropriately, it could create a powerful relocation incentive without effecting national inflation in a statistically meaningful manner.

CONCLUSION

NSW's regional skills shortage is acute, and in most cases, it is growing.

This report has forecast that jobs vacancies will continue to rise across regional New South Wales over the next five years. This is despite decades of policy interventions aimed at addressing declining regional skills and labour shortages in regional Australia.

These inadequate outcomes call on policymakers to reconsider approaches to addressing regional skills shortages.

This report has explained how often, highly localised determinants of skills shortages are not thoroughly considered, and that existing skills and labour market are often too high-level to provide sufficient information that may enable strategic interventions designed to address local-level determinants of skills and labour market shortages.

This report has proposed four recommendations aimed at addressing this lack of localised solutions making.

There is no panacea for solving regional skills shortages: enhanced immigration policies, financial incentives for regional relocation, and increased investment in vocational education are all part of the mix, but don't in isolation address many of the local-level barriers to attracting and retaining workers to regional communities.

By gaining better insights into local level skills deficits and their determinants, the NSW Government should be in a position to work more collaboratively with local communities to mitigate the worst impacts of structural skills shortages, and help regional New South Wales' communities to thrive.

REFERENCES

- ABS (2009) ANZSCO - Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1 <https://www.abs.gov.au/ausstats/abs@.nsf/0/598C2E23628BB8FDCA2575DF002DA6B8?opendocument>
- ABS (2019) Barriers and Incentives to Labour Force Participation, Retirement and Retirement Intentions, 2018-19
- ABS (2021a) Australia Statistical Geography Standards, Edition 3 <https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026>
- ABS (2021b) Education and Work 2021
- ABS (2021c) Participation Job Search and Mobility, 2015 to 2021
- ABS (2022a) RM1 - Labour force status by Age, Labour market region (ASGS) and Sex, October 1998 onwards,
- ABS (2022b) RQ1 - Employed persons by Industry division of main job (ANZSIC), Labour market region (ASGS) and Sex, Annual averages of the preceding four quarters, Year to August 1999 onwards
- ABS (2022c) RQ2 - Employed persons by Labour market region (ASGS), Occupation major group (ANZSCO) and Sex, Annual averages of the preceding four quarters, Year to August 1999 onwards
- Bureau of Transport and Regional Economics (BTRE) (2006), 'Skill Shortages in Regional Australia', BTRE Working Paper No. 68. Commonwealth of Australia, Canberra.
- Cameron, R. (2011), 'Responding to Australia's Regional Skill Shortages through Regional Skilled Migration', *Economic and Social Policy*, 14 (3), 1-35.
- Cappelli, P. (2015), 'Skill Gaps, Skill Shortages and Skill Mismatches: Evidence and Arguments for the United States', *International Labour Review*, 68, 251-90
- NCVER 2022 Apprentices and trainees: December quarter 2021 <https://www.ncver.edu.au/research-and-statistics/data/databuilder#app-2021-dec>
- NSC (2022a) SA4 (2016 ASGS) To IVI Region correspondence file <https://labourmarketinsights.gov.au/our-research/page/internet-vacancy-index-methodology/#4>
- NSC (2022b) Internet Vacancy Index <https://www.nationalskillscommission.gov.au/topics/internet-vacancy-index>
- NSC (2022x) Nowcast of Employment by Region and Occupation <https://www.nationalskillscommission.gov.au/topics/nero>
- NSW Department of Planning and Environment (2022) Statistical Area 4 (ASGS 2016) Projections for year ending 30 June <https://www.planning.nsw.gov.au/Research-and-Demography/Population-Projections/Explore-the-data>
- O'Brien, M.J. (2022) "The impact of public sector employment on regional economic activity: countering seasonal fluctuations and economic shocks", *Labour and Industry* (accepted 4/10/22) <https://doi.org/10.1080/10301763.2022.2137544>
- Richardson, S. (2007), What is a Skill Shortage?. National Centre for Vocational Education and Research (NCVER), Adelaide.
- Sharma, K; Oczkowski, E., & Hicks, J. 2017. 'Skills shortages in Regional New South Wales: The Case of the Riverina'. *Economic Papers*, 36:1, 3-16.

FOOTNOTES

1. Richardson, S. (2007). "What is a Skill Shortage?. National Centre for Vocational Education and Research, (NCVR), Adelaide.
2. Cameron, R. (2011). Responding to Australia's regional skill shortages through regional skilled migration. *Journal of Economic and Social Policy*, 14(3), 46-80. <https://search.informit.org/doi/10.3316/ielapa.497383830190277>
3. https://www.nsw.gov.au/sites/default/files/2021-02/20%20Year%20Vision%20for%20RNSW_0.pdf
4. <https://www.planning.nsw.gov.au/Research-and-Demography/Population-projections/Projections>
5. <https://www.nsw.gov.au/media-releases/home-ownership-help-for-key-workers-single-parents-and-oldersingles>
6. <https://www.regionalaustralia.org.au/Web/Web/Toolkits-Indexes/Regional-Jobs-Vacancy-Map.aspx?hkey=6064557e-b227-42a4-b111-687fb40f56eb>
7. vii <https://www.nsw.gov.au/media-releases/883-million-more-reasons-to-work-bush>
8. <https://www1.racgp.org.au/newsgp/professional/study-finds-financial-incentives-not-effective-in>
9. Jongsay Yong, Anthony Scott, Hugh Gravelle, Peter Sivey, Matthew McGrail, Do rural incentives payments affect entries and exits of general practitioners?, *Social Science & Medicine*, 2014 Pages 197-205,





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