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UPPER NORTH ISLAND KEY SECTOR TRENDS TO 2015 AND LABOUR DEMAND TO 2020

Summary Report

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Authorship: This summary report has been prepared for the Upper North Island Strategic Alliance by MartinJenkins and Infometrics.

Background

At the end of August 2015, Upper North Island (UNI) councils[1] commissioned MartinJenkins and Infometrics to:

- identify criteria for selecting key industry sectors for the UNI and identify a subset of such sectors
- identify value chains for these sectors and the extent of connectedness across the UNI
- identify emerging constraints to and opportunities for growth of these sectors
- develop growth scenarios for the sectors in the UNI region and forecast the demand and supply of labour and skills for these sectors, taking into account demographic, economic and technological trends
- identify and assess actions that could be taken to improve the matching of supply and demand by reviewing existing skill-based initiatives in the selected sectors in the region
- allow UNI councils to understand the extent to which the UNI operates as an economic unit and, as a result, the extent to which it is important that industry development decisions are made within a UNI context for the success of New Zealand and individual regions and cities.

The UNI economy and labour market

UNI Gross Domestic Product (GDP) in 2015 was $117 billion, over half of the New Zealand economy ($220 billion). With average annual GDP growth of 2.1 percent over the last ten years, the UNI has grown slightly faster than the rest of New Zealand (1.7 percent per annum). However, over the last five years, the UNI's average GDP growth rate of 3.0 percent per annum was well ahead of the rest of the country (1.9 percent per annum).

The UNI area had an estimated resident population of 2.46 million people in 2015, 54 percent of New Zealand's population.

Within the UNI area, Auckland has the largest share of the population at 1.57 million, followed by Waikato (439,000), Bay of Plenty (287,000), and then Northland (168,000). Growing at 1.4 percent annually over the last ten years, the population in the UNI area is expanding at twice the rate of the rest of New Zealand.

[1] The Upper North Island Strategic Alliance (UNISA) is a grouping of seven councils. These are the four regional/unitary councils of Northland, Auckland, Waikato and Bay of Plenty, and the major city/district councils in Whangārei, Hamilton and Tauranga. There are several other councils that fall within the UNI area but are not part of the UNISA. These include the Far North, Kaipara, Hauraki, Matamata-Piako, Thames-Coromandel, Waikato, Waipa, Waitomo, Otorohanga, South Waikato, Taupō, Rotorua, Ōpōtiki, Kawerau, and Western Bay of Plenty. In all there are 22 local or regional authorities within the UNI area.

There were 1.19 million filled jobs in the UNI in 2015, almost 52 percent of all filled jobs in New Zealand.

Within the UNI, most of the jobs were in Auckland (787,000), followed by Waikato (197,000), Bay of Plenty (135,000), then Northland (65,900). Over the last ten years, employment in the UNI has grown by 1.3 percent per annum, 40 percent faster than the 0.9 percent per annum growth in the rest of New Zealand.

Higher levels of educational attainment are linked to improved labour force status. The UNI performs at a similar, although slightly better, level than the rest of New Zealand on several key indicators. For example, in 2013, 21 percent of UNI residents had bachelor degree qualifications or higher compared to 19 percent in the rest of New Zealand. 20 percent of UNI residents had no qualifications compared to 22 percent in the rest of New Zealand. In 2015, UNI's youth NEET (Not in Employment, Education or Training) rate of 11.5 percent was similar to the national rate of 11.3 percent.

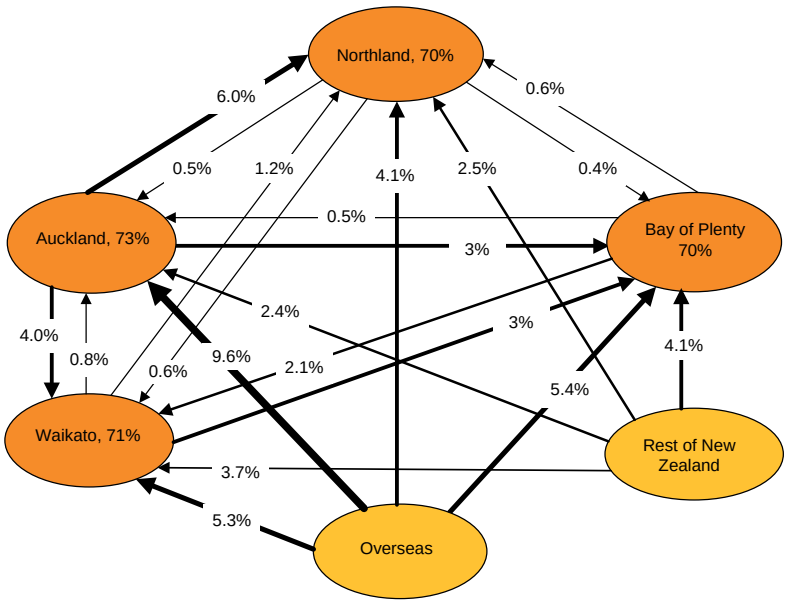
In general, people tend to reside in the region where they work and there is little inter-regional movement of people for work within the UNI.

Waikato has the highest level of out-of-region commuting in the UNI (8 percent), mainly to Auckland. Given the limited inter-regional commuting, it should not be expected that skill demands in one region could be easily met by an over-supply of labour in another region in the short-term.

However, over the longer term, research shows that New Zealanders respond to regional shortages and are prepared to relocate where job opportunities occur, but not to the point where differences in labour market outcomes are completely eliminated.[2] 2013 Census figures show that inter-regional migration between the UNI regions has been strongest from Auckland to Northland (8,700 people in Northland in 2013 previously resided in Auckland five years earlier), from Auckland to Waikato (15,700 people in Waikato in 2013 had lived in Auckland five years earlier), from Waikato to Auckland (17,450 people), from Auckland to Bay of Plenty (7,770) and from Waikato to Bay of Plenty (7,820). Figure 1 shows the proportion of each UNI region's population that lived in other regions five years earlier.

[2] Mare D. and Timmins J. (2003). "Moving to Jobs?", Motu Working Paper #2003-07. Motu Economic and Public Policy Research Trust. The report clearly shows that internal migration flows are related to relative local labour market conditions. The report notes that the link between migration and local conditions does not mean that regional differences in labour market outcomes are eliminated. There is a good deal of persistence in relative labour market outcomes. It would appear that migration provides a means of smoothing fluctuations in local demand, but not in removing longer-term differences in relative labour market outcomes.

Figure 1. Inward migration to UNI regions



Source: MartinJenkins based on Census 2013. The arrows show the direction of migration from each region, with the proportions representing the percentage of the destination region's population that resided in the source region in 2008. Thicker arrows represent a larger proportion of the destination region's population.

In sum, although the numbers are relatively small, the largest volume of flows of people between UNI regions has been from the larger urban regions to their neighbouring regions. A relatively large source of migrants is from overseas. Assuming these flows continue, they suggest where UNI regions are more likely to source labour over the medium to long-term.

Key sectors

Key sectors are defined as those that offer the greatest potential for output and employment growth within the UNI regions.

An assessment of the competitive strength of each sector (based on each sector's level of concentration in the UNI and employment, productivity and value added scale and growth), sector market opportunities (domestic and export growth) and the broader impacts that each sector has on the economy identified the following as key sectors for the UNI:

- Forestry & wood processing
- Construction & construction-related services
- Dairy & dairy related services

- Food & beverage cultivation & processing
- Tourism
- Freight & logistics
- Business & professional services
- Health services & residential care.

Future labour supply

The baseline forecast suggests that the UNI labour force will grow from 1.24 million in 2013 to 1.53 million in 2033. This growth rate of 1.1 percent per annum is lower than the 1.9 percent per annum growth rate that the UNI has experienced since 2000. This suggests that labour supply could impose a constraint on growth in the future.

Future labour supply is dependent on the number of school and tertiary education leavers and migration.

Nationally, and in the UNI, the overall number of young people leaving schools is not expected to grow over the coming five years, with the overall number of school leavers in the UNI projected to decline 1.7 percent (by 500 people) over the next five years. A total of 33,000 school leavers are likely to be available for work over the 5-year period to 2020.

Drawing on current and historic enrolment and completion data at a regional level, the number of graduates from tertiary education organisations in the UNI that will be available for work can be estimated over the 2016 to 2020 period. We estimate that, over the 5-year period, 228,000 graduates from tertiary education in the UNI will make themselves available for work in the year after graduation.

The UNI will also gain workers through net international and regional migration (from other locations in New Zealand). We estimate that a net additional 134,000 people of working age could migrate to the UNI between 2016 and 2020. Almost three quarters of these migrants (73 percent) are likely to come from overseas.

Overall, over the 2016 to 2020 period, there will be an estimated additional 395,000 people in the UNI available for work.

Of this additional pool of labour, 45 percent (177,000 people) are expected to have a level 1-3 qualification as their highest qualification and 33 percent (131,000 people) are expected to have a Bachelor Degree or Higher.

Demand for labour

In forecasting the demand for labour, we first established a baseline forecast based on a number of assumptions related to future economic growth. Nationally, the baseline forecasts assume moderate growth in the economy in the five years to 2020 (2.6 percent per annum) and more limited growth in employment (1.5 percent per annum). Strong net migration inflows and a lift in building activity are expected to more than offset continued weak global demand and a lower New Zealand dollar.

The BAU forecasts estimate employment growth in the UNI of 1.9 percent per annum over the five years to 2020, compared with the 1.8 percent per annum achieved over the five years to March 2015.

The BAU forecasts suggest that an additional 115,400 jobs will be created between 2016 and 2020. This equates to a growth rate of 1.9 percent per annum over the period, which is faster than employment growth of 1.5 percent per annum that is forecast nationally.

Forecast growth was broken down by region and by sector in the UNI and these forecasts were tested against industry research and with a number of businesses and industry organisations. Key factors that influence the demand for labour were considered:

- Resource availability – for example, the expected availability of core inputs for some sectors such as logs in forestry and crops in food and beverage
- Market demand – particularly expected changes in global demand for primary products and tourism, in consumer demand resulting from population growth, and due to the pipeline of infrastructure investment (including visitor infrastructure) planned in regions
- Production capacity – for example, if we were aware of new investments in processing plants, ports and freight hubs
- Innovation and technological changes – such as automation and R&D which will increase productivity and may reduce the demand for labour in certain sectors (e.g., robotics, larger vehicles).

As a result of the more detailed research and feedback, employment forecasts were moderated for some sectors and regions.

Following moderation:

- Auckland is the only region that is forecast to grow at a faster rate than nationally, at 2.2 percent per annum. The weakest employment growth is forecast to be in Northland (0.9 percent per annum) followed by Waikato (1.3 percent per annum). Employment in Bay of Plenty is forecast to grow by 1.5 percent per annum.

- Strong growth in employment in the UNI is forecast for construction and related services (5.5 percent per annum), business and professional services (2.4 percent per annum), health services and residential care (2.2 percent per annum) and tourism (2.0 percent per annum). Low or negative employment growth is forecast for freight and logistics (0.7 percent per annum), dairy and related processing (-0.1 percent per annum), food and beverage (0.5 percent per annum) and forestry and wood processing (-1.2 percent per annum).

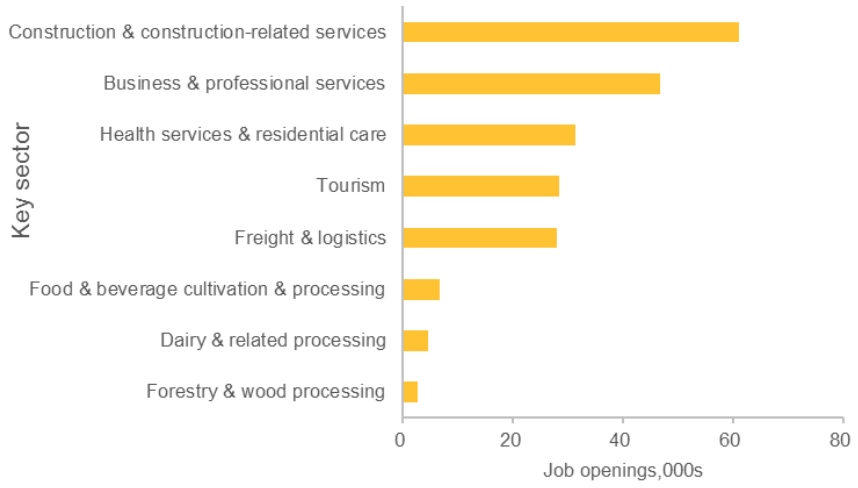
In addition to new jobs, workers will be required to replace workers who leave jobs to work in different industries or who leave the labour market (e.g., retire, leave the country). The forecasts estimate that an additional 247,300 workers will be required to meet this replacement demand over 2016-2020.

Combining the demand for workers to fill new jobs and replacing existing jobs, an additional 363,000 workers are likely to be required in the UNI over the 2016 to 2020 period. This is just over 6.1 percent of the total number of filled jobs in 2015, on an annualised basis.

The greatest demand for jobs will be for people with a level 1-3 qualification (152,000, 42 percent). There is also likely to be strong demand in jobs requiring people with a Bachelor degree or higher, with 30 percent of all job openings in the UNI likely to require people with these qualifications.

About 209,000 of these job openings over 2016 to 2020 are expected to be in the key sectors, with over half of these (52 percent) in the construction and related services and business and professional services sectors (Figure 2).

Figure 2. Forecast UNI job openings by key sector, 2016 to 2020



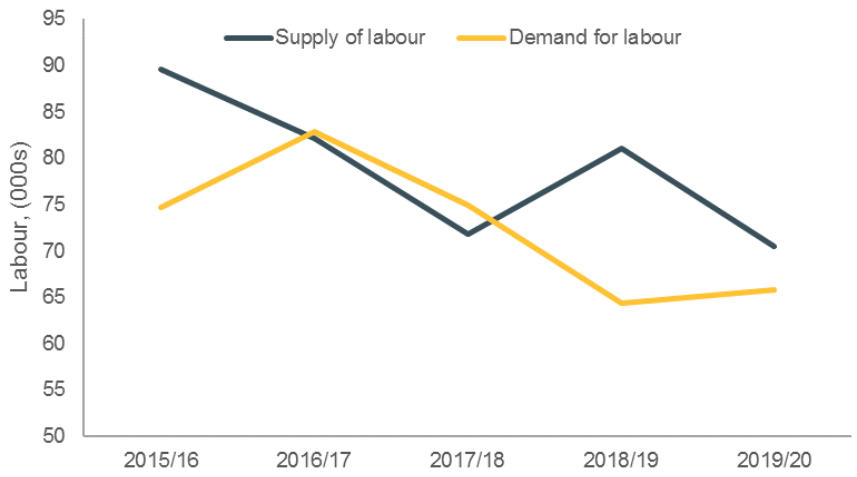
Source: Infometrics

Not surprisingly, Auckland is expected to have the largest absolute share of job openings, accounting for 68 percent of all openings. The next major source of job openings is Waikato (15 percent), followed by Bay of Plenty (12 percent) and Northland (5 percent).

Match between demand and supply

Over 2016-2020 the forecasts estimated there will be a net oversupply of labour of 32,400. However, there are years (2016/17 and 2017/18) where demand for labour exceeds supply of labour. In the final year (2019/20) there is a relatively small surplus of labour, which will make matching skills to jobs more difficult (Figure 3).

Figure 3. Skill imbalances in the UNI by individual year, 2016 to 2020



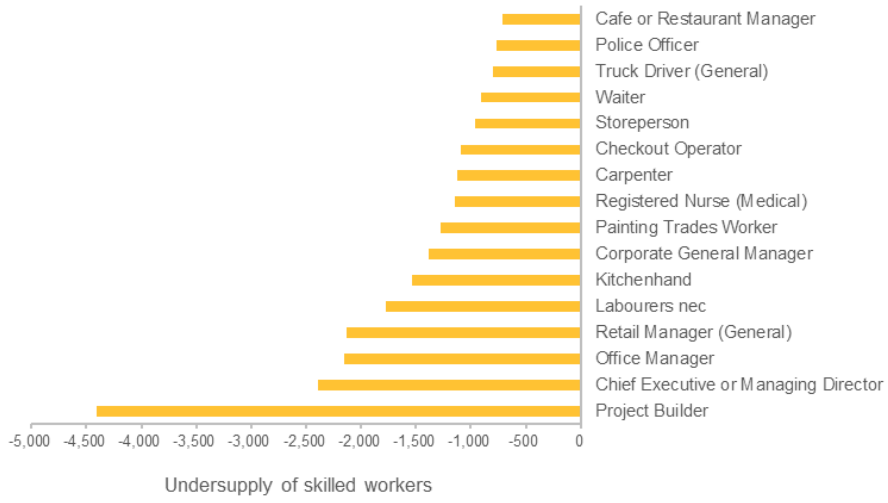
Source: Infometrics

Although the forecasts suggest a net oversupply of labour over the 2016 to 2020 period at the aggregate level, this does not mean there will not be shortages of certain skills.

Only if there was a very good match between the type of new skills produced and the type of skills required by employers would there be no skill shortages. The greater the available supply, the more likely skills can be matched to jobs.

Our modelling finds that there are several occupations where there are expected to be an undersupply of workers over 2016 to 2020. As shown in Figure 4, large shortages are forecast in occupations related to construction (e.g., project builders, carpenters, painting trades workers), transport and logistics (e.g., truck drivers, storepersons) and tourism (e.g., retail managers, kitchenhands).

Figure 4. Forecast occupational shortages in the UNI, 2016 to 2020



Source: Infometrics

Sector forecasts and labour challenges

Forestry and wood processing

The forestry and wood processing sector is a relatively large sector in the UNI, contributing $2.0 billion to GDP and employing 16,700 people, and generating exports of $2.8 billion. The sector grew at a slower rate than the UNI economy over the last ten years and, while GDP increased by 0.3 percent per annum, employment declined by 2.5 percent per annum.

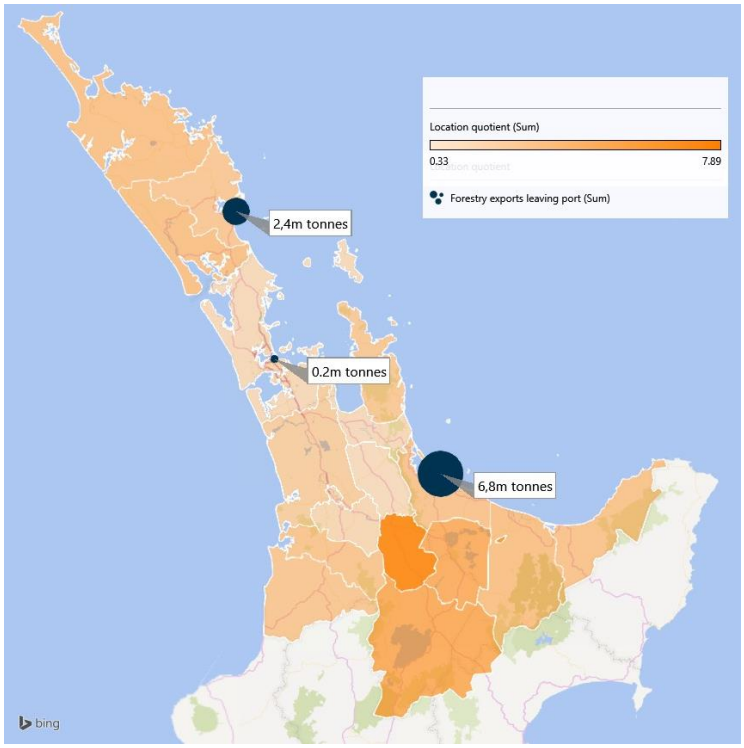
Within the sector, close to three times as many people are employed in wood product manufacturing than in forestry and logging or pulp and paper product manufacturing. Although several major industries experienced an increase in GDP over the last five and ten years, a large number of processing industries experienced a decline in employment.

The sector has a higher proportion of low skilled (56 percent compared to 38 percent) and medium-skilled workers (17 compared to 13 percent) relative to the UNI economy as a whole. The top occupations in the sector in the UNI are forestry workers (6.7 percent of total employment), wood processing machine operators (5.2 percent), sawmill or timber yard workers (4.9 percent) and labourers (4.8 percent).

The sector is concentrated in Bay of Plenty, Waikato and Northland regions, and even more so in certain districts such as Kawerau, South Waikato, Taupō and Rotorua (Figure 5). Auckland is also important to the sector as a large proportion of further processing for the domestic market occurs there.

From a geographic and logistics perspective, sector activity is self-contained within the UNI. Most processing is located close to where the trees are harvested or near final demand. The majority of inputs are purchased, and outputs are moved, within the UNI. Moreover, each sub-region's output is largely used within that particular sub-region or exported through the nearest port (with the exception of some movement of product from Auckland and Waikato to Bay of Plenty, presumably for export, and limited movement of product from Bay of Plenty to Auckland for processing). There is also relatively limited commuting of workers in the sector between UNI regions.

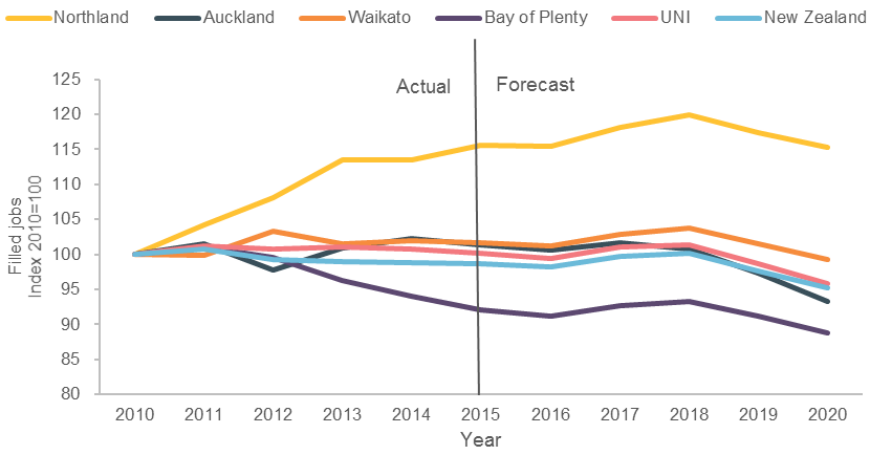
Figure 5: Forestry & wood processing, concentration of employment by territorial authority and export value by port



Source: Infometrics, Deloitte, 2014. Note: the darker coloured districts are where sector employment is more highly concentrated.

Forestry and wood processing sector employment in the UNI is forecast to decrease by 1.2 percent per annum over 2016 to 2020, with expected increased production and processing offset by increased efficiency in the use of labour. The fall in employment is expected to be the strongest in Auckland (-2.0 percent per annum). Northland will see the lowest decline in employment at -0.4 percent per annum (Figure 6).

Figure 6: Forestry & wood processing, historical and forecast employment growth by UNI region, 2010 to 2020



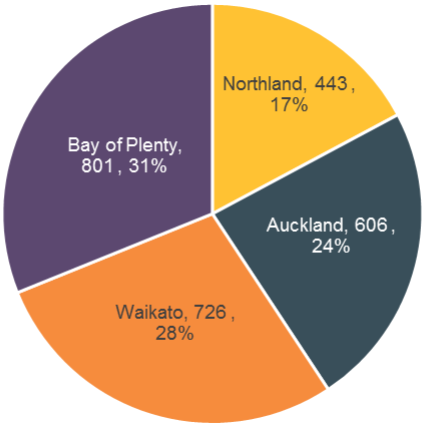
Source: Infometrics

Over the five years to 2020 the number of jobs in the sector is expected to reduce by 1,020. However, an additional 3,590 people will be required to replace people leaving existing jobs. This suggests that about 2,580 job openings will need to be filled over the next five years.

Our modelling suggests that 5 of the 11 key occupations employed in the forestry & wood processing sector will be undersupplied over the next five years. The key occupations with the highest expected undersupply are: wood processing machine operators (-178), saw mill or timber yard workers (-77), production managers-forestry (-42) cabinetmakers (-34) and wood machinists (-8).

Job openings in the sector are expected to be spread across UNI regions, with the largest proportion of openings expected in Bay of Plenty, followed by Waikato (Figure 7).

Figure 7: Forestry & wood processing, job openings by UNI region, 2016 to 2020



Source: Infometrics

A relatively high proportion of job openings for forestry production managers will be in Bay of Plenty. A relatively high proportion of job openings for joiners, cabinetmakers and wood machine operators will be in Auckland.

Our view is that, although there are expected to be some occupational shortages for the forestry and wood processing sector, the numbers are not large and we do not consider additional skill or labour initiatives are required for this sector at the UNI level.

Businesses interviewed for this study were not experiencing skills or hiring constraints. They considered that there were a sufficient number of people being trained, and that training programmes were of sufficient quality.

In order to continue to attract sufficient numbers of people, the sector needs to continue to improve its safety record and perceptions of the quality of the work. The industry is committed to improving its health and safety record and, in conjunction with government agencies, is implementing the recommendations from the Independent Forestry Safety Review (2014).

Construction and related services sector

The construction and related services sector contributed $8.18 billion to GDP in the UNI and employed 115,000 people in 2015 (close to 10 percent of the UNI workforce). Over the last five years, GDP and employment in the sector has grown more rapidly than the UNI economy, driven by population growth, household and business confidence and investment in infrastructure.

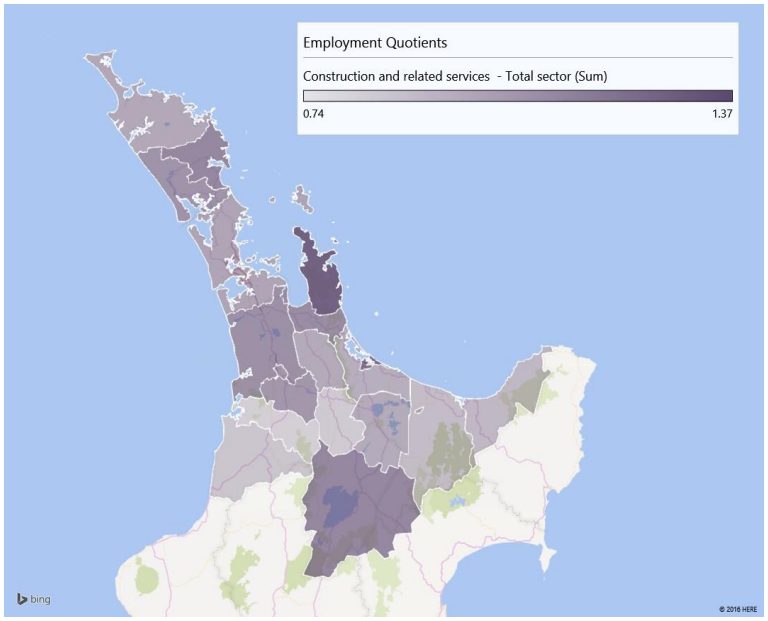
Close to two and a half times as many people are employed in construction services than in building construction. Heavy and civil engineering construction employs the lowest number of construction sector workers. The greatest growth in employment over the last ten years has been in other residential building construction, other building installation services, and other heavy and civil engineering construction.

The sector has experienced employment growth across all UNI regions over the last ten years. The strongest growth has been in Auckland and Bay of Plenty. Growth in Auckland and Bay of Plenty has picked up even further over the last five years, despite the financial crisis, whereas it has slowed in Waikato and declined in Northland.

The construction and related services sector has a higher proportion of medium-skilled employees (31 percent compared to 13 percent) relative to the UNI economy as a whole, and a much lower proportion of low-skilled workers (24 percent compared to 38 percent). The top occupations in the sector in the UNI are project builders (10.1 percent of total employment), electricians (5.3 percent), carpenters (3.8 percent) and painting trades workers (3.3 percent).

Over 65 percent of the sector's employment in the UNI is based in Auckland. Districts within the UNI that stand out as having a high ratio of workers in the construction sector are Thames-Coromandel, Hamilton City and Taupō in Waikato, and Tauranga City in Bay of Plenty (Figure 8).

Figure 8: Construction & related services, concentration of employment by TA



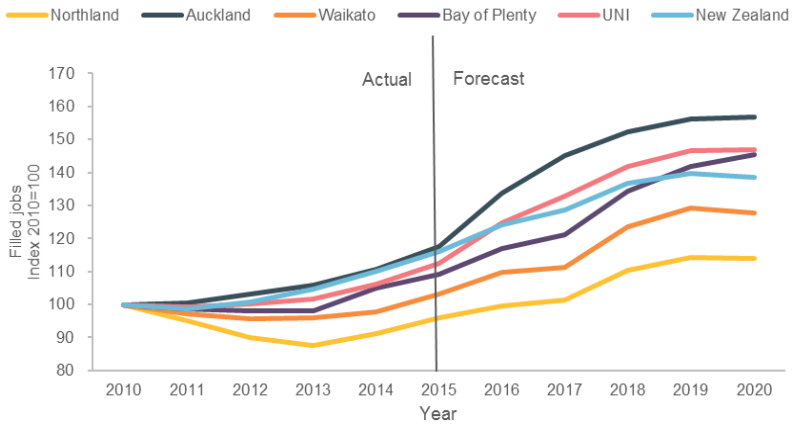
Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

This sector is also quite self-contained within the UNI (only 11 percent of the sector's purchases are imported into the region) and is geared toward providing services within defined geographic areas, although there are linkages across UNI regions. Larger engineering and national construction companies work across regional boundaries although they tend to have divisions or franchises responsible for different areas. Previous research on inter-regional labour movements indicates that inflows of domestic construction labour into UNI regions tend to come from other UNI regions. There is a reasonable degree of commuting of workers in this sector within the UNI, with over 6 percent of Northland's construction workforce and over 5 percent of Waikato's workforce coming from other UNI regions. More than 1200 construction sector workers in Auckland come from Waikato. This suggests that, even in the short-term, construction workforce demands in one UNI region may be able to be met from labour in other UNI regions.

Employment in the UNI is forecast to grow by 5.5 percent per annum over the five years to 2020, led by Auckland and Bay of Plenty (both 5.9 percent per annum). Sector employment growth in Waikato and Northland is also forecast to be strong at 4.3 percent per annum and 3.5 percent per annum respectively (Figure 9). Sector growth will be driven by strong population growth, an undersupply of housing in Auckland, significant non-residential projects and a need for continued investment in infrastructure.

Over the five years to 2020, the number of new jobs in the sector is expected to increase by 35,400. In addition, a further 25,600 job openings will be required to replace people leaving existing jobs in the sector. Altogether, a total of 61,100 construction job openings will need to be filled over the next five years in the UNI.

Figure 9: Construction and related services, historical and forecast employment growth by UNI region, 2010 to 2020

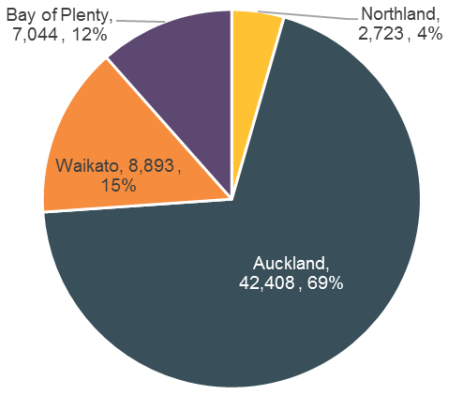


Source: Infometrics

The forecasts indicate that 15 of the 20 key occupations employed in the construction & related services sector will be undersupplied over the next five years. Those with the highest projected undersupply are project builders (-4,410), painting trades workers (-1,270), and carpenters (-1,130).

Job openings in the sector are expected to be heavily concentrated in Auckland, which is estimated to have around 70 percent of the job openings over 2016-2020 (Figure 10). However, there are still large numbers of job openings also expected in Waikato and Bay of Plenty.

Figure 10: Construction and related services, job openings by UNI region, 2016 to 2020



Source: Infometrics

Discussions with industry suggest that there are indeed employment constraints. There is a general view that an insufficient number of people are being trained, that training is fragmented and that some training programmes do not provide the necessary level of quality. The industry indicated that the future of critical parts of the recruitment pipeline need to be assessed such as Gateway and Apprenticeship subsidies.

There are other issues that the industry needs to address to attract and retain workers, including:

- the limited management capability of small firms to manage high workloads and to respond to fluctuations in demand
- the sector has a relatively high level of work related accidents and injuries. A poor safety record and perceptions of poor health and safety practices can make the industry less attractive for prospective employees and also result in higher than average employee turnover
- industry representatives have indicated that the sector is not particularly attractive to younger workers, female workers or older workers; is perceived as low-skilled, involving hard work and long-hours; and that there is a general lack of understanding of career opportunities in the sector
- employees can have low levels of literacy and numeracy, which impacts on retention and career progression.
- the cyclical nature of the industry makes it difficult to retain workers during periods of low demand.

There are a large range of initiatives underway across the UNI to address skill shortages in this sector. These include:

- the Auckland construction sector workforce roadmap to assist tertiary education providers to respond to employment growth driven by the growing level of construction activity in the region
- the Auckland ARA initiative that aims to maximise local job opportunities resulting from the Airport's major redevelopment programme
- Maori and Pasifika Trades Training initiatives throughout the UNI that are focused on the sector.

There are also a range of national programmes relevant to the sector. However, given the expected number of jobs required, there will need to be a significant increase in recruitment and training of key occupations. Existing UNI initiatives will require expansion and likely replication in other areas with incremental change unlikely to be sufficient. We note, however, that there may be a sizeable workforce that will be available from Canterbury after construction activity in that region peaks in 2017.

In order to smooth construction sector demand and facilitate inter-regional movement of scarce labour, it may also be beneficial if the sector and local and central government coordinate the timing of major infrastructure investment and explore procurement approaches across the UNI.

Dairy and related processing

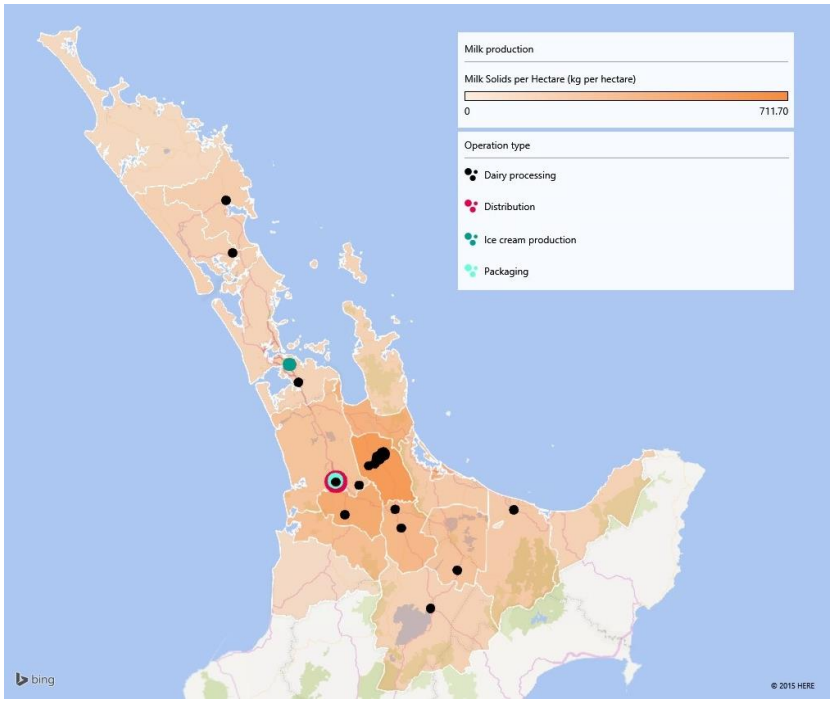
The dairy and related processing sector in the UNI contributed $3.10 billion to GDP, employed 26,300 people and generated exports of $7.6 billion in 2015. The sector has been growing more slowly than the rest of the region in terms of GDP, employment and productivity over the last ten years, although exports from the sector have grown significantly.

The performance of the sector is heavily influenced by dairy cattle farming as this is where the greatest proportion of value add and employment occurs. In 2015, dairy cattle farming accounted for 74 percent of GDP and 70 percent of jobs. However, the greatest growth in GDP and jobs over the last decade has been in the manufacturing and support services industries within the sector. The number of filled jobs in dairy cattle farming has fallen over the last ten years.

Reflecting this, the sector has experienced the strongest growth in GDP over the last decade in Auckland. Average GDP growth in the other UNI regions has been quite limited, although jobs in the sector have grown in all UNI regions over the last five years.

The dairy and related processing sector in the UNI has a higher proportion of high skilled workers (55 percent compared to 38 percent) relative to the UNI economy as a whole, but a much lower proportion of medium and medium-high skilled workers (6 percent compared to 24 percent). The top occupations in the sector in the UNI are dairy cattle farmers (38.5 percent of total employment), mixed crop and livestock farm workers (10.7 percent) and dairy cattle farm workers (6.3 percent).

Figure 11: Concentration of milksolids production and location of dairy processing in the UNI



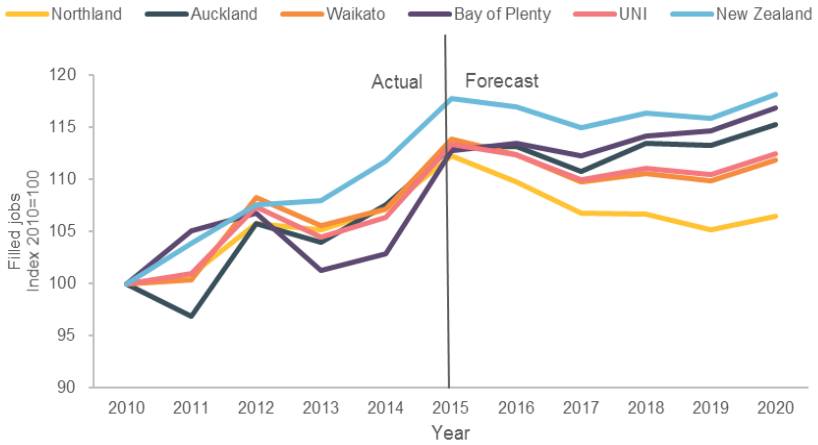
Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

Waikato is the epicentre of the dairy industry in the UNI and can also be considered the centre of the industry nationally, contributing two thirds of the sector's GDP and 57 percent of employment. Most key processing plants are in Waikato (Figure 11). There are also strong pockets of activity in Northland (Kaipara) and Bay of Plenty (eastern BOP). Auckland plays an important processing role (e.g., all Fonterra ice cream), although only contributes ten percent of the sector's employment in the UNI.

This industry is also largely self-contained within the UNI, with the majority of inputs sourced and outputs moved within the UNI. Moreover, each sub-region's output is largely used or moved within the particular sub-region, with the exception of freight of manufactured dairy products from Waikato to Bay of Plenty for export and freight of liquid milk products from Auckland to Northland and Waikato. There are also very few workers in the sector commuting between UNI regions. That suggests that each UNI region will need to meet labour demands for this sector from largely within their own region in the short-term.

Dairy sector employment in the UNI is forecast to decline by 0.1 percent per annum from 2016 to 2020. The sector is currently facing tough times due to the reduction in global dairy prices and planned conversions of other forms of agriculture (e.g., forestry) to dairy have halted. Milk prices and production are not expected to recover until the medium to long-term. There are a range of planned processing plant expansions in the UNI, although growth in employment from expected increases in processing is expected to be offset by technological and efficiency gains. The forecasts do suggest that there will be some employment growth in Bay of Plenty and Auckland reflecting processing growth. Employment in Waikato and Northland is expected to fall, reflecting the maturity of dairy farming in those regions.

Figure 12: Dairy & related processing, historical and forecast employment growth by UNI region, 2010 to 2020



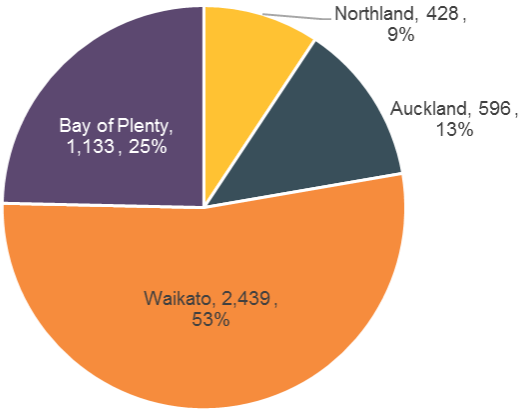
Source: Infometrics

While the number of jobs in the sector is expected to decline by 106 in the five years to 2020, an additional 4,700 people will be required to replace people leaving existing jobs. This suggests that 4,600 job openings will need to be filled over the next five years across the UNI.

Our modelling suggests that only two of the 10 key occupations employed in the dairy and related processing sector will be under-supplied over the next five years and both are technical occupations: chemistry technicians (-73) and agricultural technicians (-39).

More than half of the forecast job openings will be in Waikato (2,440), with another quarter in Bay of Plenty (1,130). The greatest number of job openings are expected for dairy cattle farmers, mixed crop and livestock farm workers and dairy cattle farm workers.

Figure 13: Dairy & related processing, job openings by UNI region, 2016 to 2020



Source: Infometrics

Industry representatives we talked to indicated that, despite the tough conditions, there are shortages of dairy farmers in some areas and shortages of technical skills related to processing, such as food technologists and food safety experts. Industry feedback suggests that young people are not attracted to the industry because of the long hours, hard work and isolation of farming. The industry itself needs to promote career paths and opportunities in the sector.

However, overall it does not appear there will be major skill shortages faced by this sector in the UNI over the next five years. The labour market for the sector is relatively self-contained to each region, which does not lend itself to cross-UNI interventions.

If specific constraints emerge for the dairy sector in the UNI, these are likely best addressed through industry initiatives and locally focused actions rather than UNI-wide initiatives.

Food and beverage cultivation and processing

The food and beverage cultivation and processing (food and beverage) sector in the UNI contributed $2.5 billion to GDP, employed 28,800 people, and generated exports of $3.3 billion in 2015. The sector's GDP, employment and exports grew more slowly than the rest of the UNI economy over the ten and five years to 2015.

Within the sector, the largest proportion of GDP and/or filled jobs is in the other food products manufacturing industry (13 percent of GDP and 16 percent of jobs) followed by bakery product manufacturing (10 percent of GDP and 12 percent of jobs) and kiwifruit growing (5 percent of GDP and 9 percent of jobs). Soft drink and syrup manufacturing and wine and other alcoholic beverage manufacturing contribute a large proportion of GDP (13 percent each) but make a smaller contribution to employment.

The strongest growth in employment over the last ten years has been in other crop growing (12.2 percent per annum), beekeeping (7.8 percent per annum), beer manufacturing (6.1 percent per annum) and grape growing (5.0 percent per annum).

The food and beverage sector experienced relatively strong growth in Waikato over 2005 to 2015 and 2010 to 2015 and in Northland over 2010 to 2015. There has been low growth in the other UNI regions. Despite the relatively low growth compared to the UNI economy as whole, the sector's employment growth in the UNI has been above the national sector average over 2010-2015.

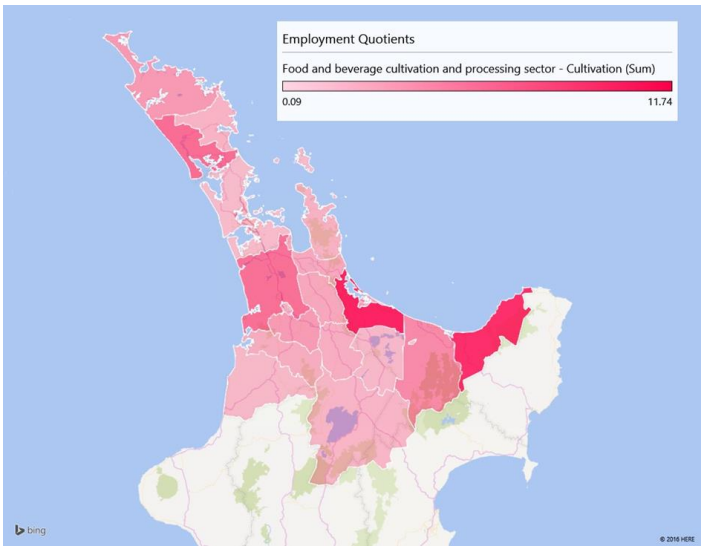
The sector in the region has a higher proportion of low skilled workers (53 percent compared to 38 percent) relative to the UNI economy as a whole, and a lower proportion of medium and higher skilled workers. The top occupations in the food and beverage sector in the UNI are fruit or nut growers (5.5 percent of total employment in the sector), bakers (5.3 percent), labourers (4.7 percent), sales assistants (3.8 percent) and container fillers (3.3 percent).

Auckland accounts for almost 60 percent of the sector's jobs in the UNI. Bay of Plenty has a high concentration of the sector, with Western Bay of Plenty, Opotiki, Waikato, Kaipara, Waipa, Whakatāne and Far North also having a concentration of food and beverage activity. The greatest concentration of food and beverage cultivation is in Opotiki and Western Bay of Plenty while the greatest concentration of processing is in Auckland, Waikato District and Western Bay of Plenty (Figure 14).

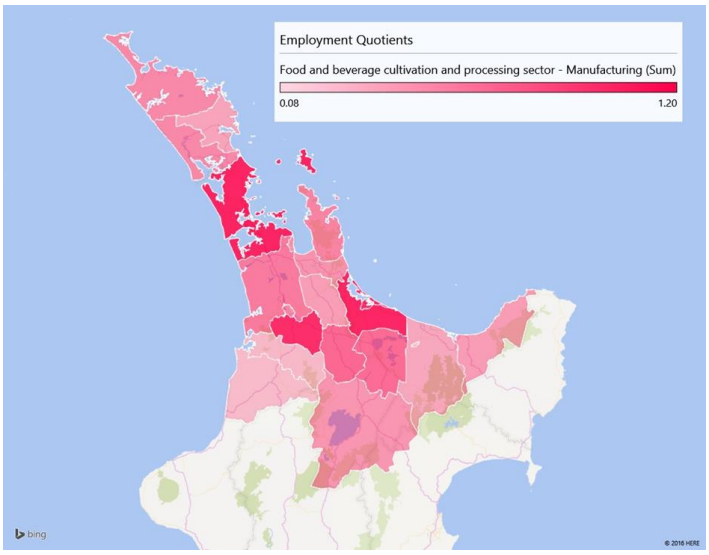
The sector purchases inputs from a range of other sectors, particularly livestock farming and meat processing, dairy and related processing, freight and logistics and business and professional services, and hence is reliant on the performance of these sectors. There are also some strong linkages in the sector across UNI regions, particularly from regional areas into Auckland. For example, more than a quarter of Northland's and Waikato's horticultural freight is transported to Auckland. Similarly, 20 percent of Northland's and 25 percent of Waikato's freight of other food products are transported to Auckland. In Northland and Waikato, relatively large proportions of the sector's workforce (8 percent and 6 percent respectively) commute from other areas of the UNI, particularly Auckland. This suggests that the sector's labour force in Auckland will be reasonably affected by growth in the sector in other UNI regions. It also suggests that some of the demand for food and beverage workers in the other UNI regions may be able to be met from the Auckland labour market.

Figure 14: Food & beverage, concentration of employment in cultivation and processing industries by territorial authority

Cultivation



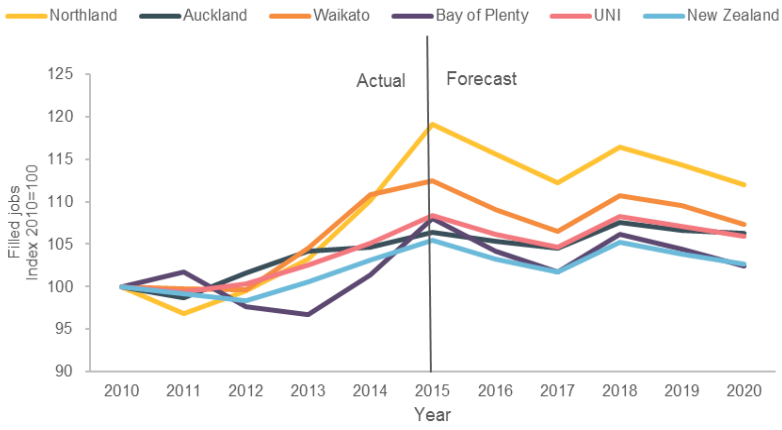
Processing



Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

Employment in the food & beverage sector in the UNI is forecast to grow by 0.5 percent per annum over 2016-2020. As with other primary sectors, employment growth from expected increases in production and processing will be offset to a degree by technological and efficiency gains. Employment growth is expected to be strongest in Bay of Plenty (1.0 percent per annum) followed by Auckland (0.6 percent per annum). Employment in the sector is forecast to decline over the next five years in Northland (-0.6 percent per annum) and Waikato (-0.2 percent per annum) (Figure 15).

Figure 15: Food and beverage cultivation and processing, historical and forecast employment growth by UNI region, 2010 to 2020



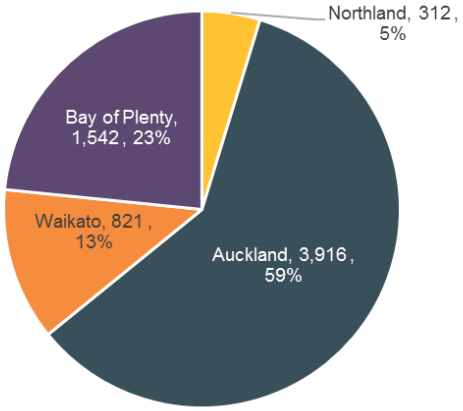
Source: Infometrics

The number of jobs in the food and beverage sector is expected to increase by 690 over 2016 to 2020. However, an additional 5,900 people will also be required to replace people leaving existing jobs. This suggests about 6,600 job openings will need to be filled in the sector over the next five years.

Our modelling suggests that 3 of the 14 key occupations employed in the food & beverage sector will be under-supplied over the next five years. These occupations are container fillers (-484), food & drink factory workers (-163), and baking factory workers (-12). Occupations expected to be undersupplied are all low qualification jobs (level 1-3).

Auckland is expected to have the majority of job openings (59 percent), with close to a quarter of job openings expected in Bay of Plenty and another 13 percent in Waikato (Figure 16).

Figure 16: Food and beverage cultivation & processing, job openings by UNI region, 2016 to 2020



Source: Infometrics

Based on the findings and our review of research, the major labour force issue facing the food and beverage sector is the difficulty the horticulture segment has in finding lower skilled workers for cultivation, particularly in high seasons.

For example, labour shortages for kiwifruit crop-picking are an ongoing problem in Bay of Plenty. Kiwifruit orchards rely on attracting a high number of pickers from outside the region and, predominantly, from overseas. There has been limited success with sharing labour resources across industries (e.g., kiwifruit and avocado growers), with the intention to create a more stable workforce. The Recognised Seasonal Employer (RSE) policy is regarded by the industry as critical as it helps to address seasonal labour and skills shortages that cannot be readily filled from the available New Zealand labour pool.

There are two key projects underway nationally to address skill shortages and seasonality issues: a) supplementing RSE with a similar scheme for New Zealand workers, and b) further demand/labour analysis for the horticulture and viticulture sector to underpin the development of longer-term labour and skills strategy for the sector. It is not apparent that any further effort needs to be made by UNISA at this stage, other than encouraging the sector in the UNI to participate in the application of these initiatives.

Tourism

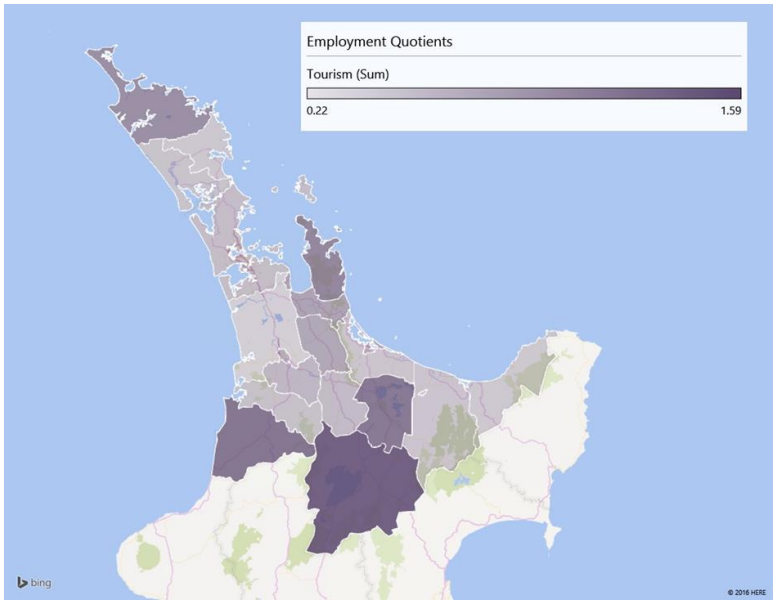
The tourism sector in the UNI contributed $4.4 billion to GDP, employed 86,300 people, and captured $4.3 billion in international visitor spend in 2015. The sector has experienced GDP growth at close to the same rate as the UNI over the last decade, but no employment growth (on average) over that period.

Within the sector, the food and beverage serving services segment has experienced the strongest growth in employment and GDP over the last decade (2.4 and 3.4 percent per annum respectively), followed by passenger transport (1.7 and 2.7 percent per annum respectively). The retail sales segment has experienced strong GDP growth but low employment growth. Accommodation activity has grown slowly over the last ten years, but this has picked up over the last five years, experiencing the second fastest employment growth at 2.2 percent annually.

There was close to $10.6 billion of visitor spending in the UNI in the year ended March 2015, with 40 percent of that being international visitor expenditure. Visitor expenditure grew by 3.2 percent per annum over 2010-2015, slightly slower than the 3.3 percent per annum growth nationally. Guest nights in the UNI have grown by 2.9 percent per annum over the same period.

Auckland accounts for the greatest share of economic activity in the sector (65 percent of GDP and 60 percent of employment), followed by Waikato, Bay of Plenty, then Northland. The greatest intensity of employment is in the key tourist destinations of Taupō, Rotorua, Thames-Coromandel, and Far North (Figure 17).

Figure 17: Tourism, concentration of employment by territorial authority



Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

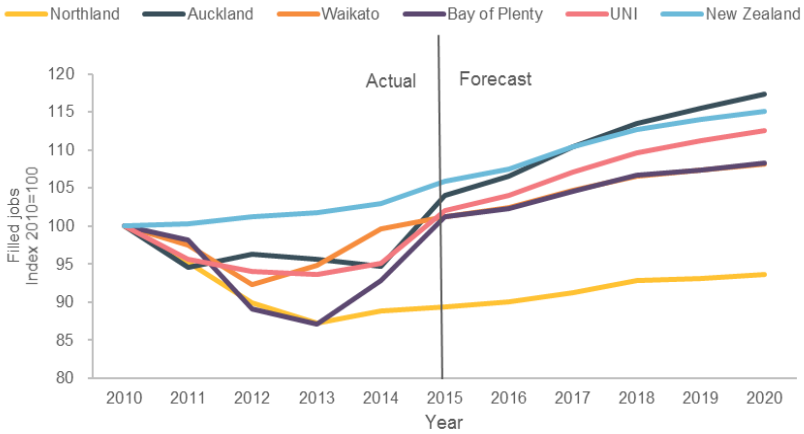
The strongest growth in sector GDP has been in Auckland and Waikato, with Northland GDP only growing at a third of the national rate. On the other hand, growth in tourism sector employment in the UNI has lagged well behind New Zealand over the last ten years. None of the UNI regions' tourism sectors grew as fast as tourism nationally over the last decade and Northland has seen a decline in tourism sector employment over the last ten years. Although employment has improved over the last five years, only Auckland's tourism sector grew at a faster rate than nationally.

The sector in the region has a significantly higher proportion of medium skilled workers than the UNI economy as a whole (25 percent compared to 13 percent). Contrary to what might be expected, the share of low skilled workers in the sector is far less than for the UNI economy as a whole (22 percent compared to 38 percent). The largest occupations in the sector in the UNI are sales assistants (6.7 percent of total employment in the sector), chefs (4.6 percent), waiters (3.8 percent), café or restaurant managers (3.0 percent), commercial cleaners (2.8 percent) and retail managers (2.7 percent).

Tourism is well connected with a range of other sectors, with close to 50 percent of visitor expenditure in the sector going into purchasing services and intermediate goods from a wide range of other industries, including construction, food processing, wholesaling, business and professional services. The sector is also strongly linked across the UNI, with the majority (55 percent) of domestic visitor expenditure in the UNI derived from visitors within the UNI itself. Just over a third of Auckland's, 74 percent of Bay of Plenty's, 84 percent of Northland's and 74 percent of Waikato's domestic visitor expenditure is derived from visitors from other UNI regions. These interconnections suggest that constraints in and labour demands from one UNI region will have flow-on impacts to other regions.

Tourism sector employment in the UNI is forecast to increase by 2.0 percent per annum over 2016 to 2020 (Figure 18). Employment growth is expected to be strongest in Auckland (2.4 percent per annum) followed by Waikato and Bay of Plenty (both 1.3 percent per annum), then Northland (0.9 percent per annum).

Figure 18: Tourism, historical and forecast employment growth by UNI region, 2010 to 2020

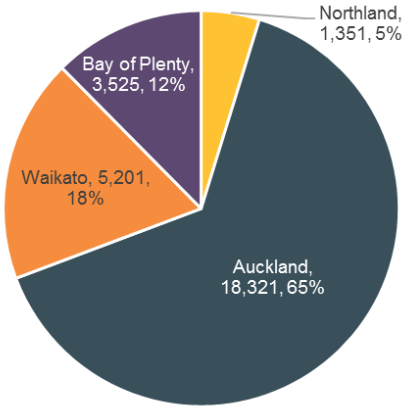


Source: Infometrics

The number of new jobs in the sector is expected to increase by 8,860 over the five years to 2020. However, to replace people leaving existing jobs, an additional 19,530 people will be required. This suggests that about 28,400 job openings will need to be filled over the next five years.

Of the total job openings, the majority will be in Auckland (18,300, 65 percent) followed by Waikato (18 percent), Bay of Plenty (12 percent) then Northland (5 percent). The greatest number of job openings are in food service jobs such as waiters, chefs, kitchenhands and café workers.

Figure 19: Tourism, job openings by UNI region, 2016 to 2020



Source: Infometrics

The forecasts suggest that there will be an undersupply in nine of the 16 most relevant jobs in the tourism sector over the next five years. The occupations with the greatest expected undersupply are kitchenhands (-1,530), waiters (-910), café or restaurant managers (-710) and hotel or motel managers (-320).

Industry representatives consulted confirmed that tourism businesses are experiencing labour and skill constraints. Specific occupations already in high demand include chefs, waiters and hotel/accommodation managers. Demand for labour is very seasonal and temporary migrant labour is making up an increasing proportion of the workforce and will continue to play an important role in meeting demand.

There is not a clear education and training pathway into some tourism sector occupations. Previous research also suggests that the sector is poorly promoted as a career and the generally low pay also impacts on the attractiveness of the sector.

These issues are well known and there are several regional initiatives underway to address constraints, such as the new tourism training college that is opening in Northland. Service IQ is also developing regional tourism workforce roadmaps that are focused on actions to address shortages. Auckland is one of the first three roadmaps being completed and it is intended that roadmaps will also be developed for Northland, Taupō and Bay of Plenty. At a national level, joint work is also underway between the sector and government on supporting and enabling the transition of beneficiaries into employment into the tourism industry, increasing the capability of businesses in the sector, and promoting tourism as a career in schools.

Given the importance of the tourism sector to all UNI regions and the interconnected nature of tourism flows and demands across the UNI, UNISA could play a role in encouraging the application of national initiatives to the region as a matter of priority.

Freight and logistics

The freight and logistics sector is significant in scale in the UNI. In 2015 it contributed $12.2 billion to GDP and employed 118,000 people. Over the last ten years the sector has experienced annual average GDP growth of around two-thirds of the UNI average and employment growth of around a third of the UNI average.

The largest industry in the sector by far in terms of employment and GDP is road freight transport, representing around 9 percent of GDP and 13 percent of employment. It employs twice as many people as the next largest industry, which is other electrical and electronic goods wholesaling (responsible for 6 percent of both GDP and employment). Other large industries within the sector are other goods wholesaling, air and space transport and other grocery wholesaling.

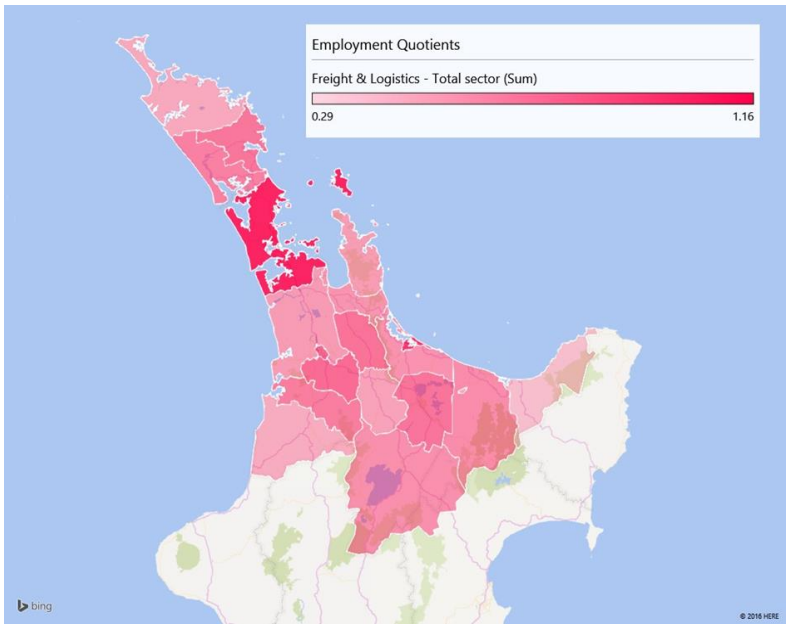
Freight and logistics industries that have grown strongly in the UNI are typically wholesaling industries, such as other machinery and equipment wholesaling, general line grocery wholesaling, other agricultural product wholesaling and professional and scientific goods wholesaling.

The sector is dominated by Auckland, which accounted for over three quarters of employment in 2015 (77 percent). Waikato accounted for another 11 percent and Bay of Plenty accounted for 9 percent. Employment growth over the last ten years has been the fastest in Auckland and Bay of Plenty (both 0.5 percent annually) while declining in Waikato (-0.1 percent per annum).

The sector has a higher proportion of low skilled employees (54 percent compared to 38 percent) relative to the UNI economy as a whole, and lower proportions of medium, medium-high and high skilled workers. The top occupations in the sector in the UNI are truck drivers, closely followed by sales representatives (both 6.8 percent of total employment), then storepersons and sales assistants (both 5.1 percent) and then sales and marketing managers (5.0 percent).

Freight and logistics is a key input for most sectors, particularly primary sectors and those with a high export component or bulky products. Inputs into the sector tend to be of a service nature – business and professional services, financial services, property services, personal services and ICT. Given this, the sector is well connected with other sectors. Geographically the sector tends to cluster around transport routes and freight distribution hubs (seaports and airports), areas with good access to the main road networks and major domestic markets. Not surprisingly, the sector is particularly concentrated in Auckland and Tauranga (Figure 20).

Figure 20: Freight & logistics, concentration of employment by territorial authority



Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

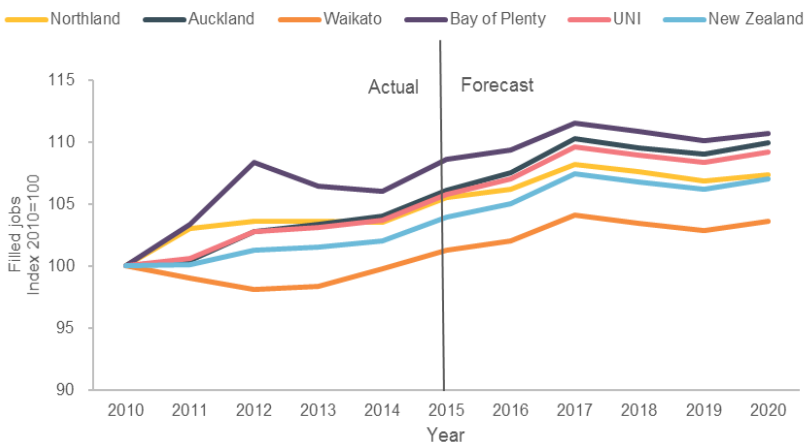
There are strong intra-UNI connections within the sector. In terms of the inter-regional movement of freight, the National Freight Demand Survey (2014) showed that most freight generated within each UNI region is freighted within that region or to other UNI regions, rather than being transported across other regions. Road freight flows tend to be into Auckland from the other regions, from Auckland into Bay of Plenty, and between Waikato and Bay of Plenty. This reflects the importance of the Ports of Auckland and Tauranga in exporting goods and also Auckland's position as a major market.

There is also a reasonable proportion of rail freight transported across UNI regions, particularly from Auckland and Waikato to Bay of Plenty. However, there is limited movement of freight between the Ports in the UNI.

Moreover, there is a relatively high level of commuting of workers in the sector between some UNI regions. Six percent of Northland's freight and logistics workforce lives in Auckland (285 workers), and over 1500 of Auckland's workforce comes from Waikato.

Despite the relatively strong growth in freight that is forecast over the period, capital investment and efficiency improvements (e.g., through improved ports, roads, technology) means that employment is unlikely to increase at the same rate as economic activity. Freight and logistics employment in the UNI is forecast to increase by 0.7 percent per annum in the five years to 2020 (Figure 21). Employment growth is expected to be strongest in Auckland (0.8 percent per annum) followed by Waikato (0.6 percent per annum) then Northland and Bay of Plenty (both 0.5 percent per annum).

Figure 21: Freight & logistics, historical and forecast employment growth by UNI region, 2010 to 2020



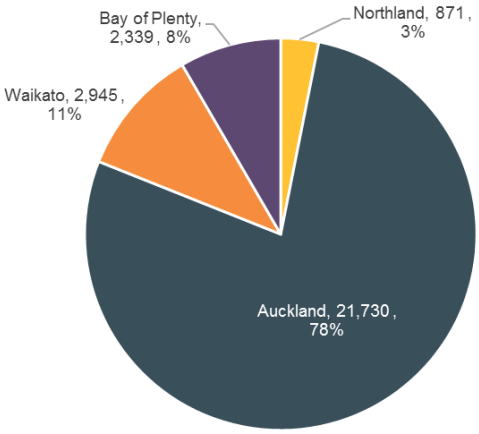
Source: Infometrics

The number of jobs in the sector is expected to increase by 4,410 in the five years to 2020. However, to replace people leaving existing jobs, an additional 23,500 people will be required. This suggests that about 27,900 job openings will need to be filled over the next five years.

Our modelling suggests that eight of the top 18 key occupations in the freight and logistics sector are expected to be undersupplied over the next five years. Key occupations that are expected to be undersupplied are storepersons (-966), truck drivers (-802), motor mechanics (general) (-413), container fillers (-484) and corporate services managers (-549).

Over three quarters of the job openings in the sector are expected to be in Auckland (Figure 22). Job openings for truck drivers and motor mechanics (general) will be spread more evenly across the UNI regions.

Figure 22: Freight & logistics, job openings by UNI region, 2016 to 2020



Source: Infometrics

Feedback from industry representatives suggests that generally the sector is not experiencing skill/hiring constraints except in two areas: logistical support staff in service centres and truck drivers. The industry has been vocal about a shortage of truck drivers for several years. There are concerns that young people are not entering the truck driving profession and that there is a lack of clear pathways for young people into truck driving. As it can take several years to get a full class 5 license to operate heavy vehicles, there can be lags in addressing these shortages. Given this, employers are turning to migrant labour as an alternative way to recruit drivers.

New qualifications have been developed by MITO, NZQA and industry, which will provide clearer career pathways in the sector. The Ministry of Transport has also recently released a discussion document on the driver licensing review, which includes suggestions for improving the process for getting a class 5 license.

Our view is that the most significant current and future skills issue facing the freight and logistics sector in the UNI is a lack of truck drivers.

UNISA is already playing a role in addressing skills issues for this sector as it has signed up to the Upper North Island Transport Accord, which includes, as one of the action areas, ‘a future-fit freight workforce’. Actions already underway include a working group that is undertaking further analysis to determine the scope of workforce capacity issues, and an examination of the impact of the Graduated Driver Licensing System on heavy vehicle training as part of the review of driver licensing.

Two key initiatives in the UNI which could also warrant UNISA attention are:

- Bay of Plenty Polytechnic offers a truck driver course which accelerates the time it takes students to get from class 1 to class 5 and has been expanding delivery of the course into Waikato. It is discussing setting up the course in Auckland with National Road Carriers Inc.

- The Auckland Chamber of Commerce has also proposed a joint venture with the haulage and logistics sector to develop a group employment and training scheme for Class 5 licensed truck drivers in Auckland. The Chamber is developing a proposal for central government consideration.

Given the significance of the sector to the UNI and the forecast demands for key occupations, UNISA could discuss with Bay of Plenty Polytechnic, National Road Carriers, Chamber of Commerce and central government whether and how these initiatives could be applied to the broader UNI.

Business and professional services

The business and professional services sector in the UNI contributed $9.2 billion to GDP, employed 144,000 people, and generated exports of $763 million in 2015. Over the last ten years, GDP has been growing slightly slower, and employment slightly faster, than the rest of the UNI. This has resulted in slower productivity growth at about half the UNI average.

Within the sector, management consulting services (19 percent of GDP and 15 percent of employment) and corporate head office management services (15 percent of GDP and 12 percent of employment) are the largest industries in value and employment terms. Other large employing industries in the UNI are labour supply services (10 percent of employment), accounting services (9 percent) and building cleaning services (8 percent). Together these five industries contribute more than 50 percent of the sector's employment.

Non-financial intangible assets leasing and other professional, scientific and technical services have enjoyed the strongest employment growth over the last ten and five years, at close to 10 percent per annum, although they are relatively small in scale. Employment in most of the sector's industries has grown over the last five and ten years.

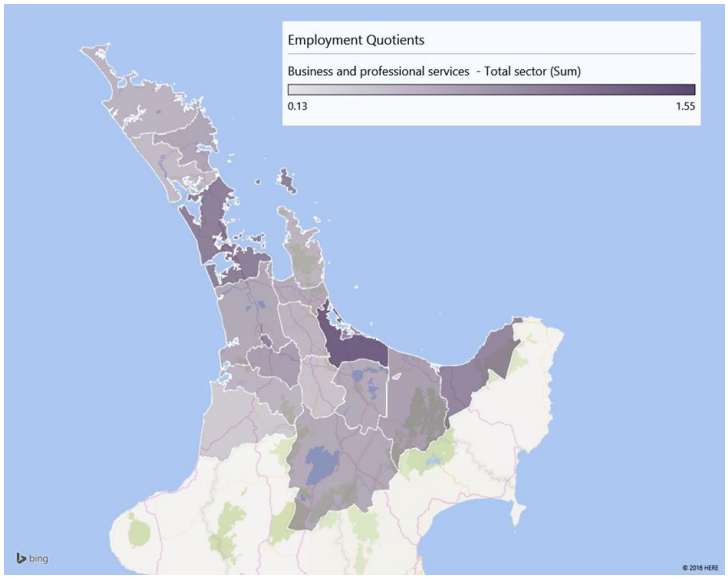
Auckland accounts for 75 percent of all employment in the sector in the UNI. Employment has increased in all regions over the last ten years, led by Bay of Plenty (2.8 percent per annum), with Waikato experiencing the slowest growth in employment at 1.2 percent per annum.

Not surprisingly, the sector has a higher proportion of high skilled workers than the UNI economy as a whole (46 percent compared to 38 percent). It has a smaller share of low, medium and medium-high skilled workers than the UNI economy overall. The top two occupations in the sector, commercial cleaners and accountants, each employ over 8,000 people and account for 12 percent of employment in the sector. Other major occupations are solicitors (3.3 percent), general clerks (2.9 percent) and chief executives or managing directors (2.8 percent).

Business and professional services are strongly linked with other sectors. They are an input into all other sectors and the sector purchases services from several other sectors, particularly freight and logistics, property and ICT. However, inter-regional linkages are more limited as business and professional service firms tend to service the locality and region in which they are based. However, more specialised services in the larger centres, such as Auckland, Tauranga and Hamilton, do service other regions.

The sector is reasonably concentrated in the three major cities but is not particularly concentrated in other region centres such as Rotorua, Whangārei or Taupō (Figure 23). However, there is a reasonably high concentration of the sector in Western Bay of Plenty and Ōpōtiki.

Figure 23: Business & professional services, concentration of employment by territorial authority

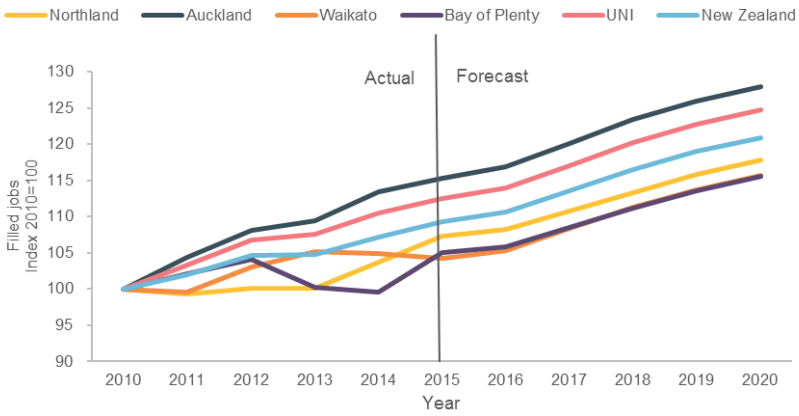


Source: Infometrics. the darker coloured districts are where sector employment is more highly concentrated.

The continued concentration of population and economic activity in the UNI bodes well for this sector. Business and professional service firms are likely to favour establishing themselves in this region due to a growing customer base, the benefits of being sited close to similar businesses, and ongoing investment in physical and communications infrastructure.

The sector's employment in the UNI is forecast to increase by 2.4 percent per annum over 2016 to 2020 (Figure 24). Employment growth is expected to be the strongest in Auckland and Waikato (both 2.4 percent per annum), followed by Bay of Plenty and Northland (both 2.2 percent per annum).

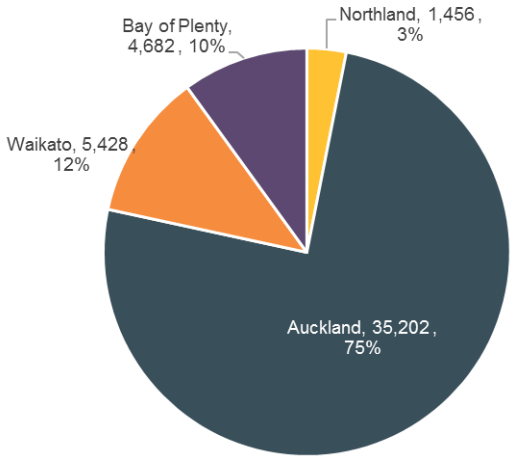
Figure 24: Business & professional services, historical and forecast employment growth by UNI region, 2010 to 2020



Source: Infometrics

The number of jobs in the sector is expected to increase by 18,100 over the five years to 2020. In addition, 28,600 people will be required to replace people leaving existing jobs. This suggests that over 46,800 job openings will need to be filled over the next five years. Of the total job openings, three quarters are expected to be in Auckland, with another 12 percent in Waikato and 10 percent in Bay of Plenty (Figure 25).

Figure 25: Business & professional services, job openings by UNI region, 2016 to 2020



Source: Infometrics

Our modelling suggests that there will be an undersupply of appropriately skilled applicants in 11 of the 24 key occupations related to the sector over the next five years. The occupations expected to have the largest levels of undersupply are chief executive or managing directors (-2,430), office managers (-2,150), labourers (-1,770), and corporate general managers (-1,390).

Although the number of forecast job openings for the business and professional services sector is significant, given the general nature of the occupations that are forecast to be under-supplied (i.e., managers, chief executives and labourers) and the diversity of the sector, it would be difficult to design any UNI intervention to mitigate potential shortages for the broad sector.

A large range of other employment and skill initiatives geared towards other sectors will help to grow the supply of labour for these occupations.

Health services and residential care

The health services and residential care sector in the UNI contributed close to $6 billion to GDP and employed 97,000 people in 2015. Over the last ten years, employment in the sector has been growing at more than twice the rate of the rest of the UNI, and GDP has been growing twice as fast.

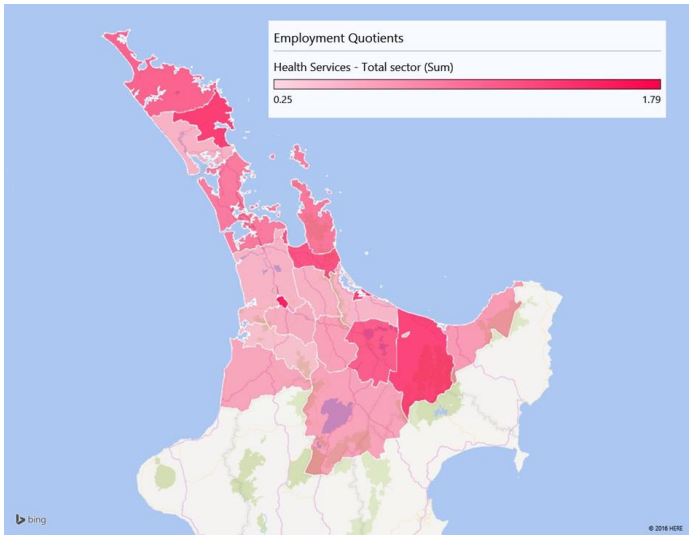
The three largest industries within the sector are hospitals (36 percent of both GDP and employment), allied health services (18 percent) and aged care residential services (14 percent). General practice services and other residential care services are also relatively large. All industries in the sector have experienced GDP and employment growth over the last ten and five years apart from optometry and optical dispensing. Other health care services, ambulance services, specialist medical services, other residential care services and physiotherapy services have experienced strong growth in employment (over 5 percent per annum) over the last decade.

Being population focused, the health services and residential care sector is dominated by Auckland, followed by Waikato, Bay of Plenty and then Northland. Employment growth over the last ten years has been the fastest in Auckland (3.8 percent per annum) with the sector also growing strongly in the other UNI regions at between 2.5 and 2.8 percent per annum.

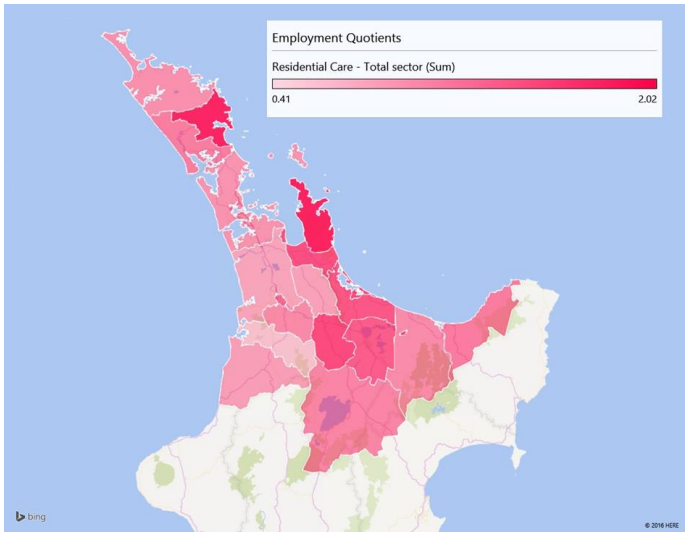
Around 60 percent of the sector's value and employment in the UNI is based in Auckland, with close to another 20 percent in Waikato. Employment in health services is concentrated in Whangārei, Hamilton, Hauraki and Whakatāne (Figure 26). In residential care, employment is concentrated in Whangārei, Thames-Coromandel and South Waikato, reflecting the location of several retirement villages (Figure 26).

Figure 26: Health services & residential care, concentration of employment by territorial authority

Health services



Residential care

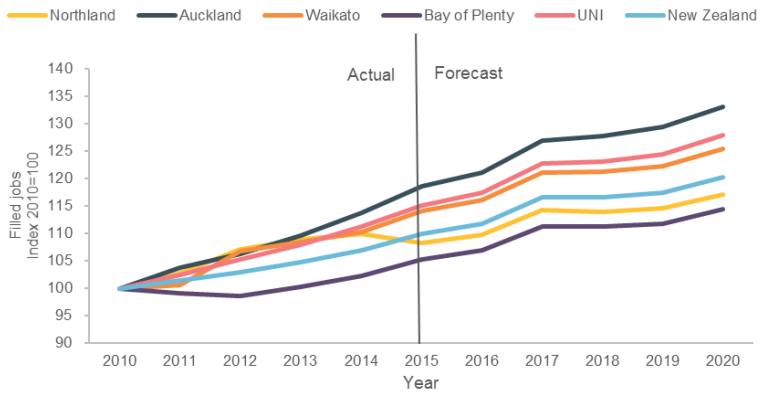


Source: Infometrics. Note: the darker coloured districts are where sector employment is more highly concentrated.

Inter-regional connections are not as apparent in this sector. In some cases, District Health Boards (DHBs) work together to contract for shared services in key areas. For example, HealthAlliance NZ Limited is a joint venture company owned by the Auckland, Counties-Manukau, Northland and Waitematā DHBs. The Auckland DHB also provides specialist services for people in the Northern, Midland and Central regions.

Health services and residential care sector employment in the UNI is forecast to increase by 2.2 percent per annum to 2020 (Figure 27). Although demand is increasing, health providers are constrained by funding so are constantly looking at employment efficiencies, with employment being the key cost area. Employment growth is expected to be strongest in Auckland (2.3 percent per annum), followed by Waikato (2.1 percent per annum), then Bay of Plenty (2.0 percent per annum) and Northland (1.7 percent per annum).

Figure 27: Health services & residential care, historical and forecast employment growth by UNI region, 2010 to 2020

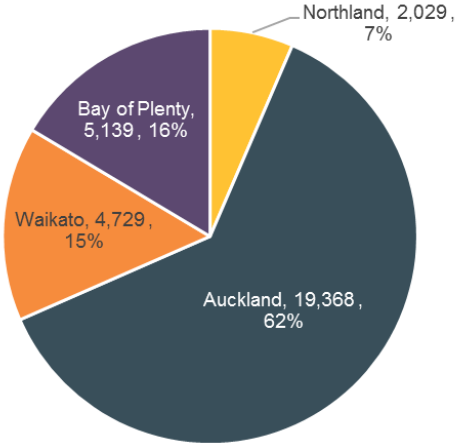


Source: Infometrics

The number of jobs in the health services and residential care sector is expected to increase by 10,910 over 2016 to 2020. However, an additional 20,355 people will be required to replace people leaving existing jobs. This suggests about 31,270 job openings will need to be filled over the next five years. In part, this reflects the fact that almost half of the UNI's future population growth will occur in the 65 plus age brackets. There are also a significant number of aged care facilities in the pipeline in the UNI.

Over 60 percent of the job openings are expected to be in Auckland, with another 30 percent split across Waikato and Bay of Plenty (Figure 28).

Figure 28: Health services & residential care, job openings by UNI region, 2016 to 2020



Source: Infometrics

The forecasts suggest that 12 of the 23 key occupations employed in the health services and residential care sector will be under-supplied over the next five years. The occupations with the largest expected under-supply are registered nurses (medical) (-1,149), medical laboratory technicians (-342), dental assistants (-291), registered nurses (mental health) (-151), nursing support workers (-169) and midwives (-134).

Industry representatives indicated that nursing and specialist technician occupations are areas where there are existing hiring constraints. It is perceived that there can be issues of people gaining a qualification and then leaving New Zealand, including migrant workers. In addition, there were concerns expressed about a relatively old carer workforce. The sector can be unattractive to younger workers due to low pay, tough working conditions and a lack of career opportunities in some occupations.

At a national level, Health Workforce New Zealand provides leadership on the development of the health and residential care sector's workforce. They have several taskforces focused on different skill and occupational needs including medical, nursing, midwifery, allied health, science and technical; kaiāwhina and leadership. For example, Health Workforce New Zealand and Careerforce have developed the Kaiāwhina Workforce Action Plan that is focussed on up-skilling and engaging the "non-regulated" health and disability workforce, such as carers.

Overall, despite the forecast under-supply of some occupations in the health sector, it is not apparent that UNISA should play a skills-related role with this sector. The constraints are well recognised and appear to be being addressed by the sector and central government.

A role for UNISA

So what then is the role of UNISA in addressing the skill and labour market challenges we have identified? In thinking about the role for UNISA, the usual tests of the appropriate roles of local and regional government in economic development can be applied.

UNI councils undertake planning and manage regulatory functions, infrastructure and services that impact on business and investment decisions. As such, UNI councils have a natural role in working with the private sector to ensure that these functions, assets and services facilitate economic growth. Beyond these general roles in supporting business and industry growth, UNI council investment in more 'active' economic development interventions, such as skills and labour market initiatives, can be justified when:

- there are significant problems impacting on industry and economic performance or major opportunities for growth that are not being taken up, based on clear evidence
- local and regional government organisations have a clear role in helping businesses or industries overcome the problems or pursue the opportunities, i.e., when:
  - the private and non-government sector will not come to a solution if left to their own devices or, in other words, 'market failures'[3] exist
  - local and regional government (and/or their agencies) are well placed to improve the situation with or relative to other organisations, for example, industry associations, education organisations or central government agencies. In addition, in this case, UNISA would need to be better placed to collectively address the situation than any existing local and regional government initiatives
  - involvement is consistent with the broader mandate and roles of local and regional government (e.g., providing leadership and direction through growth enhancing strategies and plans; ensuring that robust local and regional economic development data and information is available to enable decision-making; investing in and managing productive infrastructure and assets; providing core services; and ensuring regulation is administered responsively, consistently and cost-effectively).
- it is likely that UNISA involvement will succeed and the benefits of doing so will exceed the costs.

[3] There are several possible areas of market failure that can be considered in determining whether potential UNISA economic development interventions are justified, including the existence of public goods (or quasi-public goods), information problems, coordination problems, knowledge spillovers and government failures.

The first test has been met. It's clear from the research, and indeed is well recognised, that there are systemic issues impacting on the ability of some industries to obtain the skills they need and of the education, training and immigration system to deliver these to industries when and where required.

The second test is more difficult to meet. On the one hand, we do consider that the skill challenges we've highlighted are due to major information and coordination problems (e.g., between industry, individuals and the education and training system). In addition, there are some key sectors where there are stronger inter-regional linkages and hence potential cross-regional opportunities where UNISA could be well placed as a group to contribute, such as tourism. On the other hand, as highlighted in our research, there are a significant range of initiatives being undertaken to address skill demands in the key sectors across the UNI, beyond 'standard' education and training investments and programmes. In addition to the large variety of sector-driven initiatives, two broad initiatives are worth noting:

- Regional skills strategies or action plans. Every UNI region has a skills strategy or set of actions to address sector-based and cross-cutting skills issues, including the Tai Tokerau Northland Economic Action Plan, the ATEED Skills, Education and Employment Plan, the Waikato Labour Market Strategy, the Toi Moana Bay of Plenty Economic Action Plan, and Bay of Plenty Tertiary Intentions Strategy. All of these involve councils and/or council agencies.
- Central government's Sector Workforce Engagement Programme, which aims to support businesses and industry to grow through improving the ways in which they can access appropriately skilled staff at the right time and place. The programme includes engagement with several of the key sectors highlighted in this report (including in the UNI), such as tourism, construction, road freight, dairy and horticulture.

UNISA would need to be able to add value over and above such initiatives.

Whether the third test is met will depend on the nature of the intervention. However, the benefits are more likely to exceed the costs when the intervention aims to ensure additional activity beyond what would have occurred anyway, when there are many potential beneficiaries (i.e., when an initiative is focused on a sector as a whole rather than a few firms), when the intervention complements (rather than competes with or duplicates) other initiatives aimed at addressing related problems/opportunities, and when the risks and costs are shared with the private sector.

If UNISA was to play a role in relation to labour market and skill challenges, we consider that the following broad options would be the most justifiable and consistent with appropriate roles of local and regional government:

- Information and promotion:
  - providing information about skills issues and opportunities impacting on the UNI and its regions (monitoring and research)
  - promoting available skills initiatives available in the UNI and its regions. This should include promoting lessons learned from successful initiatives in different UNI regions and how they might be applied more broadly
  - providing information about planned local or regional projects in the UNI that involve significant labour requirements (e.g., infrastructure projects).
- Supporting the local application of national policy and programmes. This could include advocating for changes in policy and programme settings to meet UNI and regional needs. In some cases,

local and regional government agencies within the UNI could also assist in the local delivery of national skills initiatives to ensure they take account of local and regional circumstances (which in some circumstances may require co-investment).

- Coordination, e.g., facilitating discussions and work between different organisations in the system about how they could address the issues or opportunities at a UNI level (e.g., playing a 'neutral broker' role). This could extend to coordinating local government investment or planning activities across the UNI.

Should the UNI be considered an economic unit from a labour market perspective?

One of issues we were asked to assess is the extent to which the UNI operates as an economic unit and, as a result, the extent to which interventions may be required at a UNI rather than a regional or local level, i.e., the extent to which the coordination role noted above is required.

In relation to the labour market, which is the focus of this study, our analysis suggests that:

- In forestry and wood processing, dairy and related processing, business and professional services, and health services and residential aged care, inter-regional linkages are relatively limited beyond freighting goods to processors or ports, or providing specialist services into other regions that lack that particular expertise, and the labour markets are relatively 'self-contained' within each UNI region. From a labour market perspective, we cannot see any particular role for UNISA beyond what councils (and industry and stakeholders) may be doing in their own regions.
- For a few sectors, namely construction and related services, tourism, food and beverage cultivation and processing, and freight and logistics, there are stronger inter-sectoral and inter-regional linkages. Investment in these sectors and changes in labour demand in one region are likely to have flow-on impacts into the labour markets in other regions. We consider that labour market issues facing these sectors should be considered at a UNI level. That doesn't preclude regional responses but there may be greater benefits (e.g., efficiencies, larger impacts) if such responses were coordinated across the UNI. Potential areas for joint work are noted in Table 1.

As noted earlier, inter-regional migration flows demonstrate that the origin of the non-Auckland UNI regions' domestic migrants are weighted towards other UNI regions. Domestic migrants into Auckland tend to come from the rest of New Zealand although there have been reasonable numbers from Waikato. For Northland, Auckland has consistently been the main source of internal migrants, followed by Waikato. For Waikato, Auckland has also been the main source of domestic arrivals. For Bay of Plenty, Auckland and Waikato are key sources of local arrivals.

As at 2013, the numbers are relatively small compared to the size of the local populations and the flows of arrivals from overseas. It is quite possible that flows from Auckland to other UNI regions will increase over the next five years if housing in the major city continues to become less affordable. However, it is not apparent to us that UNISA as a group should do anything from a labour market perspective to influence intra-UNI flows of domestic migrants over and above what individual councils are doing to account for and facilitate population growth (e.g., via planning and investment in infrastructure).

Conversely, given that overseas migrants are a relatively large source of arrivals and labour across UNI regions, it may be worth UNISA considering whether there are any advantages from coordinating immigration attraction and settlement efforts. Rather than competing against each other for offshore skills, it would be worth testing whether the UNI as a whole could attract more skilled (offshore) migrants required for particular sectors by promoting opportunities across the UNI and improve migrant outcomes by collectively considering where settlement would be most appropriate (and whether the benefits of doing so would exceed the costs). This would be an extension of what some local councils are already doing together with Immigration New Zealand to coordinate immigration attraction and retention within regions (e.g., the Western Bay of Plenty Regional Partnership and Western Bay of Plenty International Strategy 2016-2019).

Recommendations

The table below summarises our recommendations for the next steps for UNISA in addressing skill and labour market challenges at a sectoral and cross-sectoral level. This takes into account the research findings and the framework for thinking about the role of UNISA noted above. There will also continue to be roles for UNISA councils and council organisations at a regional rather than UNISA level.

The major immediate recommended actions for UNISA are to:

- **promote the findings of this study to emphasise the importance of the issues and to encourage industry and the education and training system to respond** (and update the forecasts on a regular basis to ensure currency)
- **identify those programmes that are operating successfully at a local/regional level and how they might be applied in other areas of the UNI where there is a similar need. This should include consideration of a UNI approach to immigration attraction and settlement for key sectors**
- **engage with central government to discuss the potential implementation of the government's sector workforce engagement programme in the UNI**
- **assess whether the coordination of major infrastructure investment (e.g., through planning and procurement) across UNI regions could help smooth construction sector labour demand and facilitate the movement of labour across regions (in consultation with the sector and central government).**

Depending on the outcomes of these next steps, there may well be further roles for UNISA (or subsets of UNISA councils) in coordinating and co-investing in sector-based skill and labour market initiatives across UNI regions.

Table 1. Proposed next steps for UNISA

Level	UNISA Role	Proposed Action
Cross-sectoral	Information	Promote the findings of this study
	Promotion	Update the forecasts every 3 years
	Coordination	Share lessons about successful local/regional programmes across the UNI area. Consider UNI-wide partnership approach to immigration attraction and settlement for key sectors
	Support the application of national programmes to the UNI	Joint UNISA and central government workshop to discuss the implementation of central government's sector workforce engagement programme and regional action plans to the UNI
Forestry and related processing	None	Local/regional councils and agencies continue to engage with the industry through regional skill strategies and plans as appropriate
Construction and related services	Support the application of national programmes to the UNI	Assess the potential for the application of current Auckland-focused construction workforce initiatives (e.g., Auckland roadmap, ARA) to other regions in the UNI with central government
	Information, Coordination	Assess the timing of major infrastructure and construction investment across the UNI and whether coordinated planning and procurement could smooth labour demand
Dairy and related processing	None	Local/regional councils and agencies continue to engage with the industry through regional skill strategies and plans as appropriate
Food and beverage cultivation and processing	Support the application of national programmes to the UNI	Monitor the implementation of the expansion of the RSE scheme and outcomes of the demand/labour analysis being undertaken by the sector
		Local/regional councils and agencies continue to engage with the industry through regional skill strategies and plans as appropriate
Tourism	Support the application of national programmes to the UNI	Discuss with MBIE the implementation pathway for central government's joint skills work with the tourism industry
		Local/regional councils and agencies continue to engage with industry through regional skill strategies and plans as appropriate
Freight and logistics	Information	Monitor progress with the Transport Accord 'future fit freight workforce' actions
	Coordination	Discuss with the Auckland Chamber of Commerce, National Roads Carrier Association, Bay of Plenty Polytechnic and central government whether and how truck drivers programmes could/should be scaled up to the UNI level
		Local/regional councils and agencies continue to engage with industry through regional skill strategies and plans as appropriate
Business and professional services	None	None
Health services and aged care	None	Although we do not propose any major actions, UNISA should discuss the scope of central government's proposed work with the aged care sector as part of the cross-sectoral work noted above