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Labour market development in the Bay of Plenty: A literature review
Prepared for Priority One on behalf of the Bay of Plenty Tertiary Intentions Leadership Group

Zanian Steele, Michael Thomson, Bill Cochrane & Patrick Barrett
School of Social Sciences, University of Waikato

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EXECUTIVE SUMMARY

Priority One, on behalf of the Bay of Plenty Tertiary Intentions Leadership group, has commissioned the University of Waikato to review publications on trends in the Bay of Plenty's labour market. Ensuring the workforce is equipped with the skills required for the jobs of today, and tomorrow, is a critical means of supporting the goals of regional growth and development. The skills required to perform traditional occupations are evolving, and new occupations are emerging, as new technologies and production processes are adopted. If businesses in the Bay of Plenty are to grow in sustainable ways, there is a need to ensure the supply of skills matches the demands of industry. This presents challenges of ensuring appropriate education and training systems are accessible and responsive to evolving skills requirements, and of supporting the movement of people within the region in response to labour demand.

This report reviews research on the Bay of Plenty labour market with a view towards identifying knowledge gaps to guide future research. It has been prepared to support the Bay of Plenty Tertiary Intentions strategy which guides wider initiatives aimed at ensuring the region's needs for an educated and skilled workforce are met. This research is the first stage in developing the evidence base for a Bay of Plenty labour market model.

Findings are organised around three core themes:

  i.   an overview of key economic and demographic indicators;

  ii. a summary of skills and skill development strategies; and

  iii. a summary of core industries, infrastructure, and sector strategies for industry growth.

METHODS AND SOURCES

This report reviews the state of knowledge on the Bay of Plenty's labour markets and broader economy. It is based on a thematic survey of academic literature, commissioned reports from consultants and think-tanks, and documents released by local, regional, and national government. Documents published since 2009 were included if they considered economic or demographic trends relevant to the labour market of the Bay of Plenty or its constituent territorial authorities, including Taupo. An open-ended, snowballing search strategy was employed to maximise sensitivity.

ECONOMIC AND DEMOGRAPHIC COMPOSITION

Publications on the economic and demographic composition of regional indicators were predominantly authored by economic consultancies, think-tanks, and banks. Most reports focus on the Bay of Plenty region as a whole, reporting, for example, on regional GDP (estimated to be $13.1 billion in 2016, or 5.2 percent of national GDP), and GDP per capita (estimated to be $43,000 in 2015, compared to a national average of $53,000). These reports comment on the region's growth trends, these being assessed as modest compared to other regions, with growth being driven by a relatively even division between growth in working age population and growth in output per worker (Eaqub & Stephenson, 2014).

Data on economic performance at sub-regional, territorial authority level is sparse and limited though this situation has improved somewhat of late. Performance across sub-regions varies, this being a reflection of different sub-regional economic and demographic features. MBIE (2017) have recently produced estimates of the per capita local domestic product for both the region as a whole and for its constituent district councils, along with estimates of GDP by industry and district council. Kawerau stands out with a high per capita income arising from the presence of a high value added industry, the pulp and paper mill, as do the main urban areas within the region, reflecting the concentration of economic activity in these areas.

Analyses of the labour market notes region-wide job growth trends have averaged 1 percent per year for the preceding 10 years, with labour force participation rising from 64.7 percent in 2005 to 67 percent in 2015. Human capital per capita is below average. Labour markets are centred on Tauranga, Rotorua, Whakatane, Opotiki and Taupo, and around export activity, with over 30 percent of employment deriving from export markets. Overall, limited information exists assessing the performance of territorial authorities, with a notable exception being the yearly rankings conducted by BERL.

Demographic projections suggest the Bay of Plenty's population will grow at a moderate pace from 277,300 to 317,370 by 2031. Growth will be predominantly captured by Tauranga, and to a lesser extent the Western Bay of Plenty, and it is expected to include net inflows of individuals aged 65 years or more (80 percent of projected growth). Labour force participation over the period 2013-2062 is projected to grow 26 percent in the most optimistic projection, and as the population ages, the ratio of labour market entrants (15-24 years) to exiters (55-64) is projected to decline to 8 entrants per 10 exiters between 2016-2021. This presents succession management challenges, but these will vary across industry; large employers with older age structures such as in horticulture and fruit growing will face problems, while more youthful industries such as supermarkets will not.

Net migration is positive, with the largest inflows originating from Auckland and Waikato. Inter-regional commuting and relocation are relatively insignificant in the short term, meaning the Bay of Plenty will need to be active in seeking to solve its own acute skill shortages. Growth for all districts save Tauranga and Western Bay of Plenty is projected to be modest or decline until 2033, followed by rapid declines due to changes in fertility and a shift to negative net migration.

SKILL DEVELOPMENT

Research into the qualifications and skills within the Bay of Plenty labour market indicates an increase in the number of people with NZQA Level 7 and above qualifications since 2006, indicating regional skill growth, but skill shortages persist as educational outcomes fail to align with industry need. While those with no formal qualifications were at greatest risk of being unemployed, unemployment among graduates and postgraduates has also risen (Cox, Dixon & Schulze, 2014). Youth unemployment is high with 30.8 percent of 15-19 year olds unemployed. Maori are more likely than non-Maori to be unemployed. Rates of unemployment varied significantly between territorial authorities, with more affluent areas like Tauranga City having notably lower rates of unemployment than less affluent areas like Opotiki and Kawarau.

There has been growth in the occupational groups 'professionals' and 'community and personal service workers', the latter being a category that contains both well-paid and poorly-paid

occupations (Cox, Dixon & Schulze, 2014). While the number of managers has increased nationally at 4.8 percent, in the Bay of Plenty region there has been a decrease of 2.2 percent in this occupational group, resulting in a shortage of middle management staff, especially in some high skill sites (Cox, Dixon & Schulze). Additional shortages include skilled 'technicians', 'project managers' and 'ITC specialists'.

INDUSTRY GROWTH

Publications that discuss industry growth in the Bay of Plenty note key strengths in 'agriculture', 'forestry and logging', 'wood manufacturing', 'horticulture', and 'administrative and support services'. Demographic indicators from 1996-2006 show that the four largest industries were school education, horticulture and fruit growing, construction and supermarket retail, with all but the last option having an ageing workforce, indicating an urgent need for succession planning (Jackson and Rarere, 2013).

Industry growth has not necessarily translated into employment growth. In those industries where there has been growth, employment growth was only seen in 'agriculture' and 'administrative and support services', with 'horticulture', 'forestry' and 'wood manufacturing' faring poorly, with employment growth of -3.1 percent in the 'wood manufacturing' sector between 2005-2015 (MBIE, 2015).

With GDP per capita in the region lower than the national average (MBIE, 2016), rates of employment growth are lower, and unemployment rates have been higher. The regional growth strategy, the Bay of Connections (2017), has led to the creation of industry sector initiatives that provide aspirational growth targets. These strategies cover the region but there is limited information on industry sector growth strategies at a territorial authority level, with the exception of Taupo and Opotiki, Taupo having strategies focussed around the tourism sector while Opotiki has focussed on aquaculture and harbour redevelopment (Taupo District Council, 2015; Leung-Wai, 2014; Strategic Reality, 2013).

The Bay of Connections initiative identifies region-wide strategies for development in 'aquaculture', 'forestry and wood processing', 'freight logistics', 'energy', 'Maori economic development', the 'visitor economy' and 'education' (Leeder & Marshall, 2015). Meeting the targets spelt out in these sector strategies is seen as crucial to employment growth in the region, with nearly all projected employment growth in some industries dependent on the successful implementation of the strategies (Leung-Wai, 2013).

DISCUSSION AND CONCLUSION

This review identifies a number of areas requiring further examination and analysis to guide labour supply initiatives in the Bay of Plenty. The regional economy has seen a significant upturn since 2008/9, but there is a lack of detailed up-to-date information, particularly at a sub-regional level, for the period following the 2013 census. Hence it is hard to capture the emerging labour supply and labour demand context. Given the demographic challenges facing industries with ageing workforces, and mismatches between the available skills within the labour market and the needs of industry, there is a need for locally accurate information that addresses skills needs and occupational demand. Existing data on the economy and labour market in the Bay of Plenty is aggregated to an extent that it is unable to inform specific local needs, and arguably only allows for general conclusions to be drawn about occupational change across

the major ANZSCO[1] groups. More specific territorial authority information was also identified as a significant need given the narrow focus of existing research targeted at addressing informational needs at this level. It is to be noted that MBIE has made some progress in this area (see MBIE 2017a; 2017b for example).

There is a greater need to understand what is happening locally in terms of the current labour demand and supply gaps. What are the current and future states of the labour market in the Bay of Plenty? Where is growth in the Bay of Plenty economy likely to lead to demand for more skilled labour? Given reported shortages in specific occupational areas, including technicians, ICT specialists, middle management, farm management, and forestry workers, how are these to be met?

What is the likely distribution of growth across the regions and sub-regions, and by industry sectors? Given the different characteristics of sub-regional labour markets within the Bay of Plenty region – the Western Bay of Plenty, the Eastern Bay of Plenty, Rotorua, and Taupo – there is a need for specific and up-to-date sub-regional data on labour demand and supply. What are the current sub-regional trends, where will the demand be in the future, and how might we respond to that?

What are the current characteristics of the labour supply profile at a sub-regional level, and where is there need for skill development and succession planning?

Further research is also required to examine the inter-relationship between the Bay of Plenty labour market and its regional neighbours - the Auckland and Waikato labour markets, particularly in terms of the migration/skills nexus. These involve questions around what will be required to support such intra and inter-regional commuting and migration. What is the potential for future labour skills shortages in the Bay of Plenty to be met through migration from Auckland? Are such measures more realistic for the Western Bay of Plenty than the Eastern Bay of Plenty, Rotorua and Taupo?

There is also a need to understand patterns of commuting for work within the region, and between districts. We need baseline data about travel practices and plans, so we can plan for the future.

Additionally, with various Treaty settlements, there is likely to be continuing development of the Maori economy. While we can expect this to be in key sectors such as the kiwifruit industry, Manuka, tourism and aquaculture, where else is there likely to be growth? What are the likely labour supply needs?

In sum, there is a need for more regular reviews of employment projections within the Bay of Plenty economy to inform labour supply measures. The development of a university-led tertiary campus in Tauranga has potential to contribute to meeting these gaps in labour supply by providing regionally-focussed and locally-responsive education and training opportunities. New tertiary education initiatives will be able to provide opportunities that contribute towards meeting the region's skill needs through the provision of targeted undergraduate and postgraduate teaching and research. These include new technology driven industries, and existing industries needing to adapt to the demands of emerging technologies and ICT developments, be that in the

1 The Australian and New Zealand Standard Classification of Occupations 2006 (and its revisions) is the current classification system for occupations.

primary sector (such as forestry, horticulture and dairy) where trends in automation will require greater technical skills, or in freight and logistics, or high tech manufacturing sectors. New tertiary education initiatives will also support the already strong education, health and aged care industry sectors. This review suggests, however, that currently the level of detail provided by existing labour market research is inadequate for a comprehensive region-wide plan for a tertiary education and skills development programme.

1   INTRODUCTION

1.1   PURPOSE

The purpose of this report is to review, synthesise and critique existing knowledge of the Bay of Plenty's labour markets and economic development. It was commissioned by Priority One to inform the Bay of Plenty Tertiary Intentions strategy and regional economic development agenda. The report serves two key functions:

- To identify and summarise existing knowledge on labour markets and economic development in the Bay of Plenty;

- To identify knowledge gaps and guide future research to inform strategies for sustainable economic development in the Bay of Plenty.

1.2   BACKGROUND

The Bay of Plenty is an important regional economy as part of the upper North Island's 'Golden Triangle'. Its territorial authority areas include Tauranga City, Western Bay of Plenty District, Kawerau District, Opotiki District, Whakatane District, most of Rotorua District, and a small part of Taupo District. In 2016, its GDP stood at $13.1 billion, this being 5.2 percent of national GDP (Statistics New Zealand, 2017). Its labour markets are centred spatially around Tauranga, Rotorua, Whakatane, Opotiki and Taupo (Barrett, Cameron, Cochrane & McNeill, 2009), and its key industries including tourism, forestry, dairy, agriculture, aquaculture, and transport and logistics (Slack & Schulze, 2013).

However, in common with other regions in New Zealand and abroad, the Bay of Plenty faces challenges in planning for the future of its labour markets. Structural drivers of change such as population ageing, automation, globalisation, climate change and evolving political responses will transform the environments within which labour markets operate. While some of these phenomena are difficult to project and respond to, others have been well-studied and understood.

Labour market trends and related phenomena are documented and analysed by governmental ministries and local councils, by consultancies, think-tanks, and banks, and by university-based researchers. This report has been prepared to provide the Bay of Plenty Tertiary Intentions Leadership Group with a critical synthesis of current understandings produced by these sources, with a view towards highlighting knowledge gaps. The aim is to inform future labour market research development initiatives.

The report begins by outlining the methods and sources used. The core findings are organised into three themes: i) an overview of key economic and demographic indicators; ii) a summary of skills and skill development strategies; and iii) a summary of core industries, infrastructure, and sector strategies for industry growth. Following

this, we discuss both substantive and procedural implications of the present body of research on the Bay of Plenty economy and labour market, before concluding by making suggestions for future research directions.

2   METHODS

This report reviews the state of knowledge on the Bay of Plenty's labour markets and broader economy. It is based on a thematic survey of academic literature, commissioned reports from consultants and think-tanks, and documents released by local, regional, and national government. Documents were included if they:

   i.   were related to the Bay of Plenty region or any subsidiary territorial authority (including Rotorua and Taupo Districts) in part or in their entirety;

   ii. reviewed demographic or economic indicators relevant to labour markets; and

   iii. were published after 2009.

The inclusion criteria were intentionally broad to ensure all relevant literature was included. Documents before 2009 were excluded given the disruptive nature of the global financial crisis and Christchurch earthquakes, as well as to ensure the contemporary relevance of economic indicators. Research into the labour markets and economies of Rotorua and Taupo Districts was included given the incorporation of these areas within the Bay of Plenty Regional Council's jurisdiction.

Academic literature was surveyed via Google Scholar and other digital databases. Grey literature was accessed through the websites of economic consultancies, think-tanks, local and regional councils, and central national government websites. Supplementary documents were identified through snowball methods.

Search strategies were open-ended and iterative to maximise sensitivity. Locational search terms included "*Bay of Plenty*", "*Tauranga*", "*Rotorua*" and so on. These were employed in tandem with subject search terms, including "*economy*", "*labour market*", "*skill*", "*industry*", "*growth*", "*migration*", and so on.

Information was summarised and extracted utilising a standardised format which identified the document's purpose, methods, findings, conclusions, positions and interests, limitations, and relevance to the present report.

3   SOURCES

The principal sources of information on economic and labour market trends in the Bay of Plenty economy can be grouped into three categories:

   i)   Governmental sources (local, regional, and national);

   ii) Consultancies and think-tanks;

   iii) Academic journals.

It is important to note that most economic, labour market and demographic analyses conducted in New Zealand are heavily reliant upon census data. This produces a number of challenges.

First, the relevance of census data declines during the inter-censal period, of which the current period began in 2013. Second, analyses share the strengths and weaknesses of their common data source. While the census provides information on a range of variables that can be disaggregated down to a very low level, it is necessarily limited in scope. It collects a broad range of information about members of a given population, but it does so at a level of generality that does not necessarily provide for insight into the detail of specific local contexts. Moreover, other sources of data, such as the Household Labour Force Survey, are not available below regional council level or, as in the case of Linked Employee Employer Data (which is available at District Council level), lack key demographic variables such as highest educational attainment, ethnicity and occupation.

4 ECONOMIC AND DEMOGRAPHIC COMPOSITION

This section reviews research reporting on key economic and demographic indicators in the Bay of Plenty, with emphasis on how they pertain to labour markets. Information on economic indicators was derived primarily from consultancies, think-tanks, and banks such as ANZ, Infometrics, MartinJenkins, and the New Zealand Institute for Economic Research (NZIER), with a smaller body originating from central governmental bodies such as Statistics New Zealand and the Ministry of Business, Innovation and Employment (MBIE). Demographic projections were primarily conducted by the National Institute for Demographic and Economic Analysis (NIDEA). Most sources utilise Statistics New Zealand data, and this was typically supplemented by business and research data produced by the research organisation.

4.1 ECONOMIC INDICATORS

4.1.1 Bay of Plenty Region

The Bay of Plenty regional economy is typically described as a major hub of economic activity as part of the upper North Island's 'Golden Triangle' (MartinJenkins & Infometrics, 2016). Estimates of regional GDP do vary. The MartinJenkins and Infometrics estimate, based on the 2013 census and other data calculated regional GDP to be $10.7 billion in 2015, or 9 percent of national GDP (MartinJenkins & Infometrics, 2016). A more recent Statistics New Zealand estimate calculated regional GDP to be $13.1 billion in 2016, or 5.2 percent of national GDP (Statistics New Zealand, 2017). The significant difference between these measures, particularly the measure of the Bay of Plenty as a proportion of the national GDP, can be explained by variations in methodology and data, with the Statistics New Zealand estimate being the more authoritative of the two as it is the official estimate.

Estimates of GDP per capita are produced by MBIE. It calculated Bay of Plenty regional GDP per capita to be $43,000 in 2015, compared to a national average of $53,000 (MBIE, 2016). While regional GDP and GDP per capita estimates are less reliable at the subnational than national level, due to limitations in the data used to calculate them, both measures indicate that regional growth and productivity in the mid-to-long term has been modest compared to other regions. Productivity is low by comparison to other upper North Island regions. The productivity estimates are based on estimates of GDP and employment, and in 2015 these were $89,000. This can be compared with the estimate for the upper North Island of $110, 200. The bay of Plenty's lower productivity is explained as a consequence of a lack of higher value industries such as mining and electricity, and a greater proportion of employment in lower value sectors such as tourism and the primary sector (MartinJenkins & infometrics, 2016, p.13).

ANZ data on economic growth from the quarterly *ANZ regional trends* show a turn-around from a 0.9 percent contraction to 3.7 percent growth between 2012 and 2014 (ANZ 2012; 2014). The initial poor climate for growth was explained as being influenced by a tough retail environment, with high retail building rental vacancies, and a 12-year low in tourism accommodation occupancy rates (26.5 percent) in the month of July, reflecting an under-achieving tourism sector (see Table 1; ANZ, 2012).

Table 1: ANZ Bay of Plenty Regional Summary 2012

Bay of Plenty	Date	Region	3 Month Change	Annual Change	New Zealand	3 Month Change	Annual Change
Retail Sales (s.a., $M)	Sep12	1,101.3	-0.9%	-2.7%	17,435	-0.8%	+2.1%
Paymark Transactions (s.a., $M)[T]	Oct12	744	+0.1%	+2.8%	11,573	+0.7%	+3.6%
Employment (s.a., Number, 000)	Sep12	115.8	+1.3%	-2.7%	2,218	-0.4%	0.0%
Unemployment Rate (s.a., %)L	Sep12	6.6	0.1pts	-0.8pts	7.3	+0.5pts	+0.7pts
Internet Job Ads (s.a., Number)[T]	Oct12	2,398	-2.1%	+5.9%	80,253	+1.4%	+8.0%
House Sales (s.a., Number)[A]	Oct12	875	+4.4%	+22.0%	18,713	+0.5%	+19.1%
House Price (s.a., Median, $000s)[A]	Oct12	328.2	-3.9%	+1.4%	373.7	+1.7%	+5.4%
Days to Sell a House (s.a., Number)[A]	Oct12	55	-3days	+3days	36	unch	-3days
Section Sales (s.a., Number)[T]	Oct12	52	+26.8%	+48.6%	1,322	+4.5%	+23.9%
Rural Real Estate Sales (s.a., Number)[T]	Oct12	117	-11.4%	+15.8%	1,722	-1.5%	+10.6%
New Car Registrations (s.a., Number)[T]	Oct12	1,751	-2.0%	-1.6%	38,931	-0.9%	+9.5%
Dwelling Approvals (s.a., Number)[T]	Sep12	626	+7.7%	-19.1%	10,295	+0.9%	+9.4%
Commercial Bldg Permits (s.a., Number, 000s)[T]	Sep12	36.3	-30.7%	-29.8%	961.0	+8.5%	+6.8%
Guest Nights (s.a., Number, 000s)[T]	Sep12	877	-3.0%	-15.3%	7,901	-4.2%	-7.7%
ANZ Truckometer (s.a., Index 2004=100)	Sep12	98.0	-3.4%	-2.5%	105.0	-1.2%	-1.1%
Business Confidence (Wgtd, 3Mth Net Bal)[A]	Oct12	14.6	+7.6%	+3.6pts	13.7	-0.3pts	-3.4pts
Consumer Confidence (s.a., Index)	Sep12	110.6	+13.9pts	+0.2pts	102.5	+2.6pts	-9.6pts

Sources: ANZ, Statistics NZ, Westpac McDermott-Miler, TradeMe, LTSA, Paymark, SEEK, REINZ, NZTA. [T]= 3 month total, [A]= 3 month average

By 2014, ANZ reported a booming regional economy owing in large part to surging manufacturing and logging industries. Additionally, both retail and tourism achieved significant growth, driven by inbound Chinese tourists and new tourism packages to the region from the US (see Table 2; ANZ, 2014). The ANZ regional trends data also points to significant growth in business and consumer confidence over the 2012 to 2014 period, and growth in the number of job advertisements. Unfortunately ANZ ceased to publish this regional trend data in 2016 (at the time of writing, the post 2014 data does not appear to be available from the ANZ website).

Table 2: ANZ Bay of Plenty Regional Summary 2014

Bay of Plenty	Date	Region	3 Month Change	Annual Change	New Zealand	3 Month Change	Annual Change
Retail Sales (s.a., $M)	Dec13	1,190.6	+5.1%	+9.3%	18,424	+1.2%	+3.7%
Paymark Transactions (s.a., $M)[T]	Jan14	803	+1.8%	+6.9%	12,567	+1.3%	+6.8%
Employment (s.a., Number, 000)	Dec13	116.5	-0.3%	+5.1%	2,297	+1.1%	+3.0%
Unemployment Rate (s.a., %)L	Dec13	8.7%	+1.7pts	+0.6pts	6.0%	-0.2pts	-0.8pts
Internet Job Ads (s.a., Number)[T]	Jan14	3,055	+7.0%	+22.4%	92,219	+8.5%	+16.7%
House Sales (s.a., Number)[T]	Jan14	853	-5.1%	-3.2%	19,242	-6.3%	-4.2%
House Price (s.a., Median, $000s)[A]	Jan14	366.5	+5.6%	+12.8%	418.0	+4.7%	+9.8%
Days to Sell a House (s.a., Number)[A]	Jan14	50	-2days	-8days	35	+1days	-1days
Section Sales (s.a., Number)[T]	Jan14	55	+7.8%	+1.9%	1,712	+13.2%	+8.8%
Rural Real Estate Sales (s.a., Number)[T]	Jan14	151	-2.6%	+7.9%	2,210	+3.6%	+10.1%
New Car Registrations (s.a., Number)[T]	Jan14	2,275	+4.0%	+15.8%	48,334	+4.2%	+20.9%
Dwelling Approvals (s.a., Number)[T]	Dec13	697	+0.9%	+0.3%	12,493	+5.3%	+19.4%
Commercial Bldg Permits (s.a., Number, 000s)[T]	Dec13	62.6	+26.7%	+50.8%	1,007.1	-5.2%	-1.8%
Guest Nights (s.a., Number, 000s)[T]	Dec13	964	+0.8%	+8.0%	8,523	+0.5%	+3.7%
ANZ Truckometer (s.a., Index 2004=100)	Dec13	103.8	+1.6%	+4.0%	109.7	+0.7%	+4.0%
Business Confidence (Wgtd, 3Mth Net Bal)[A]	Dec13	31.8	+8.4pts	+20.5pts	27.3	+3.2pts	+13.6pts
Consumer Confidence (s.a., Index)	Dec13	118.2	+0.9pts	+17.6pts	120.1	+4.7pts	+9.0pts

Sources: ANZ, Statistics NZ, Westpac McDermott-Miler, TradeMe, LTSA, Paymark, SEEK, REINZ, NZTA. [T]= 3 month total, [A]= 3 month average

The contributors to growth in employment and output per worker in the region between 2000-2010 were in line with national trends (see Figure 1). Using Statistics NZ data and spatial panel estimates with fixed effects by time, NZIER researchers determined that growth has been driven by a relatively even combination of growth in employment and output per worker, with a somewhat shallow boost from net migration increases in working-age population (Eaqub & Stephenson, 2014).

Figure 1: Sources of Regional Economic Growth, Average Annual Percentage Change
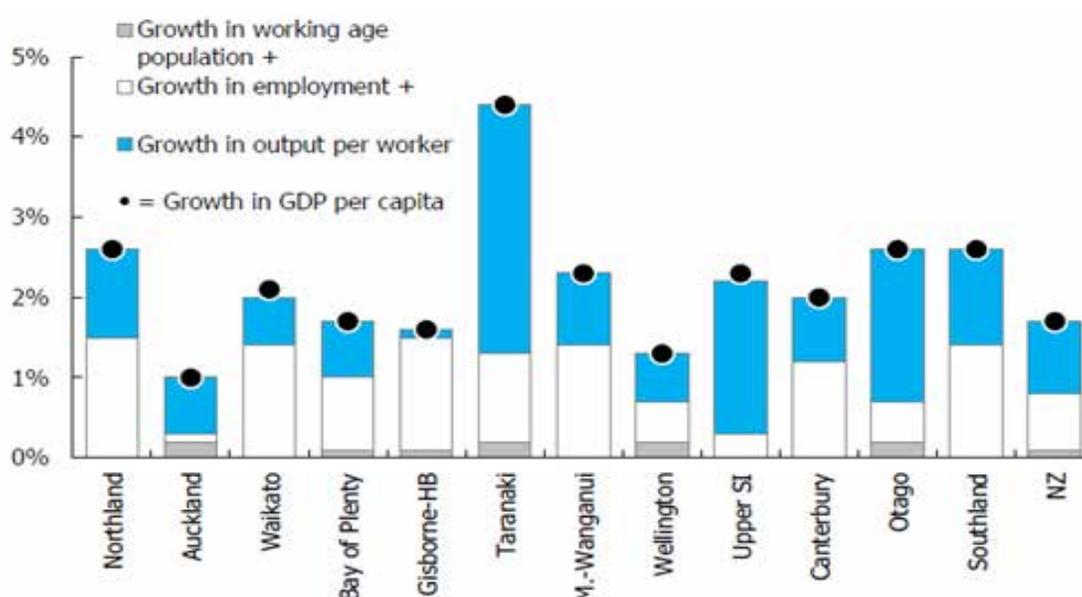
Analysis of Census 2013 and supplementary data by MartinJenkins and Infometrics (2016) as a part of advice to the Upper North Island Strategic Alliance concluded that the Bay of Plenty's labour market consisted of 135,000 jobs in 2015, 11 percent of the national. Job growth had averaged 1 percent per year for the preceding 10 years. The 2005 labour force participation rate of 64.7 percent rose to 67 percent in 2015, with most growth occurring since 2012 as the global financial crisis receded. Eaqub and Stephenson (2014) estimate the Bay of Plenty's human capital per capita is ranked 10th of 15 regions in New Zealand, with correspondingly low GDP per capita. Aside from human capital, lower regional incomes are also associated with relatively few specialisations and little diversity of industry in the regional economy.

Labour markets are concentrated around Tauranga, Rotorua, Whakatane, Taupo, and Opotiki according to a statistical overview of Bay of Plenty's labour markets conducted by the University of Waikato (Barrett, Cameron, Cochrane & McNeill, 2009).

Export industries contribute to over 30 percent of employment, compared to the national average of 25 percent. This number rises to more than 50 percent in rural areas (Bay of Connections, n.d.) emphasising the export orientated nature of the Bays economy

The Maori economy is increasingly recognised as an important component in regional economic performance, and as such it is the focus of a Bay of Connections (2013) strategy and action plan. This document reports that in 2010, Maori contributed 11 percent to the wider Bay of Plenty GDP, at $1.2 billion. The largest contributory city was Rotorua, adding $387 million to Maori GDP, primarily through forestry ($64 million), property and business

services ($51 million), and cultural/recreational services ($46 million). Tauranga Maori contributed $256 million, with property and business services and health and community services each contributing approximately $45 million. Whakatane, Kawerau, and Opotiki were found to have somewhat lower contributions. These figures are not unexpected given the large population bases and economic stature of each location.

The Bay of Connections strategy document also assessed the size and composition of the Maori asset base. Bay of Plenty Maori had an estimated asset base of $8.6 billion at the time the Bay of Connections report was published in 2013, with 63 percent of this figure deriving from 'businesses'. Of such businesses, 43 percent were 'finance and insurance assets', 13 percent were 'agriculture, forestry and fishing', 12 percent were 'property and business services', and 7 percent were 'transport and storage'. These descriptive statistics were presented to enable planners to take stock of the existing capital holdings of Maori, and identify areas for potential future investment.

4.1.2 Sub-regional Economic Indicators

Data on economic performance at sub-regional, territorial authority level is sparse and limited though this situation has improved somewhat of late with MBIE providing a range of economic variables at district council level (MBIE, 2017). For example MBIE have recently produced estimates of the per capita local domestic product for a range of years for both the region as a whole and for its constituent district councils (see Table 3). Likewise they have also provide estimates of GDP by Industry and District Council however these tables are not reproduced here due to space considerations.

TABLE 3: GDP PER CAPITA FOR BAY OF PLENTY AND TAUPO 2000-2016 ($)

	District Council								
Year	Kawerau	Opotiki	Whakatane	Tauranga	Western Bay	Rotorua	BoP	Taupo	NZ
2000	64,044	15,364	24,058	27,125	14,719	27,709	23,920	24,795	29,421
2001	72,792	18,613	25,493	27,937	16,635	30,146	25,478	28,561	30,960
2002	62,438	19,922	27,243	30,066	17,966	31,989	26,890	30,496	32,873
2003	62,266	19,379	27,094	30,988	17,702	31,526	27,245	29,499	33,883
2004	58,276	19,550	28,916	32,870	18,537	33,335	28,506	31,146	35,586
2005	64,840	21,643	32,359	34,417	19,046	34,739	30,145	32,332	37,577
2006	59,787	22,089	33,785	36,039	19,461	36,561	31,303	34,573	39,162
2007	62,272	25,529	35,511	39,089	22,034	39,559	33,869	38,872	40,911
2008	70,242	29,071	39,142	41,053	24,286	42,274	36,395	41,170	44,023
2009	59,035	26,923	39,675	41,065	23,865	40,700	35,717	41,044	44,292
2010	65,442	31,327	41,105	41,270	24,194	41,730	36,754	44,535	44,858
2011	68,806	34,100	44,736	43,294	25,699	43,245	38,763	46,561	46,535
2012	69,237	35,931	46,480	44,921	26,808	45,853	40,231	47,342	48,480
2013	67,071	36,312	48,720	45,458	26,513	46,677	40,844	46,243	49,140
2014	58,219	38,658	48,280	47,401	26,947	50,459	42,371	52,355	51,901
2015	56,279	34,007	46,434	49,085	27,552	48,696	42,617	52,212	53,116
2016	59,356	36,610	48,179	51,640	29,042	50,912	44,997	53,529	54,178

Source: MBIE (2017a)

While it is beyond the scope of this review to analyse the local GDP figures in detail, Kawerau stands out, particularly in the earlier part of the period, with a high per capita income arising from the presence of a high value added industry – the pulp and paper mill,

while the main urban areas all have relatively high (compared to the BoP figure) GDP per capita reflecting the concentration of economic activity in these areas.

Information on key economic indicators for the Taupo District are usefully outlined by Enterprise Great Lake Taupo (2017). The district has an estimated population of 34,300 (0.8 percent of the national total), contributing 16,778 FTEs to the labour market (0.9 percent of NZ economy), and 1.52 billion to GDP (0.7 percent of NZ economy). NZIER forecasts, cited by Enterprise Great Lake Taupo, predict 2.2 percent growth per annum. Its key sectors are agriculture (17.3 percent of GDP, 17.5 percent of jobs), retail & tourism (16.5 percent of GDP, 24.4 percent of jobs), and energy production (8.3 percent of GDP, 3 percent of jobs).

The suburb of Papamoa in eastern Tauranga also received attention in an Infometrics report that examined ten high-population growth settlements across the nation (Kiernan, 2016). Kiernan (2016) notes the Papamoa settlement has been transformed over two to three decades from a holiday community to an extended suburb of Tauranga. Tauranga's success at attracting growth across all age brackets has in turn created a self-perpetuating expansion of infrastructure, business, and employment opportunities. The Tauranga Eastern Link has increased Papamoa's desirability as a location for both business and residential purposes, but Kiernan (2016) did not believe that Papamoa was well suited for freight and logistics related activities as it lies on the opposite side of Tauranga to links to the growth areas of Auckland and Hamilton.

One source measuring the performance of local authority areas is BERL's annual *Regional Rankings* reports. BERL ranks each of New Zealand's 66 local authorities according to a non-weighted index of population, employment, GDP and business units, and a Relative Openness Index which measures the composition of regional industry. Comparison of the 2011 and 2012 rankings provides an indication of the relative movements within the rankings (Leung-Wai, Dustow & Molano, 2012; Leung-Wai, 2013). Both Tauranga and the Western Bay of Plenty were ranked in the top ten local authorities nationally in 2011, primarily due to what they describe as strong employment growth within these areas and gradually easing population growth (Leung-Wai, Dustow & Molano, 2012). Taupo was ranked 18th, while Eastern Bay of Plenty local authority areas were in the mid-range of the rankings.

The picture was considerably different by the following year's publication (Leung-Wai, 2013). At local authority level, Tauranga dropped 24 places from the previous report to 32nd, Taupo District dropped 15 places to 33rd, Western Bay of Plenty dropped 40 places to 46th, and Western Bay of Plenty areas and Rotorua also had deteriorating rankings. This shows volatility in the measures, but is also sensitivity to regionally specific drivers such as the impact of the PSA kiwifruit virus, which cost over 1000 FTE jobs in agriculture and agri-support services. Employment in the primary industry sector was also hit with a loss of 1700 FTEs, as was the construction sector which declined 570 FTEs. While there were declines in employment in these sectors, wholesale and distribution increased 751 FTEs, and medium-term indicators were seen as painting a better picture, with top-6 placings in population growth and GDP. Among other things, these rankings demonstrate the difficulty of planning on the basis of projected economic performance, given the relative frequency of disruptive events ranging from the PSA virus to the financial crisis to the Christchurch earthquakes.

4.2 DEMOGRAPHIC INDICATORS
4.2.1 Bay of Plenty Region
A number of demographic studies of the Bay of Plenty region have been carried out, primarily by NIDEA, with the most recent NIDEA study being the 'Review of Demographic and Labour Force

Projections for the Bay of Plenty Region for the Period 2013 – 2063' (Jackson, Cameron and Cochrane, 2014). In the baseline projections for the 2013-2063 review, Jackson, Cameron and Cochrane found that the population of the region would grow substantially over the projection period from around 280,000 to over 340,000 (21% growth).

Labour force projections in the most optimistic scenario projected labour force participation over the period 2013-2062 to grow by 26 percent (37,000 people), with that growth concentrated in Tauranga City and the Western Bay of Plenty districts. Under the most pessimistic scenario, the labour force of the Bay of Plenty Region was projected to grow by 1.7 percent (2,500 people), again with that growth being concentrated in Tauranga City and the Western Bay of Plenty district. In each instance, stochastic and baseline projections were nearly identical, thereby lending confidence to the findings.

Demographic projections suggest population ageing to have considerable implications for Bay of Plenty's labour market, and this has implications for succession management within labour markets. One measure of the age distribution within a specified labour force is labour market entry:exit ratios, which index the number of people aged 15-24 against those aged 55-64. Regionally, this ratio has fallen from 14.9 entrants per 10 exiters in 1996 to just 10.6 entrants per 10 exiters in 2012 (a 28.9 percent decline in the number of entrants), and this can be compared to the 2012 national level of 12.8 entrants per 10 exiters (Jackson, Rarere & Pawar, 2013). The region is likely to see further reductions of labour market entrants, falling to 8 entrants per 10 exiters between 2016-2021, but rising to 9 entrants per 10 exiters in 2031 due to a recent baby blip. Kawerau in 2012 has highest ratio (14.1 per entrants per 10 exiters), while the Western Bay of Plenty has the lowest ratio (7.7 entrants per 10 exiters). Opotiki, Whakatane and Tauranga are only slightly above 10 entrants per 10 exiters. Projections show declines below parity for most of the projected period.

Age structures are different by industry. For example, 'horticulture and fruit growing' is the second largest employer by industry groupings (3,483 in 2006), with an average employee age of 48.7 years in 2006 and industry entry/exit ratio of just 2 per 10. The fourth largest employer by industry grouping is 'supermarket and grocery stores', and this sector had an average age of 33.3 years in 2006, one of the youngest industry groups. One of the likely implications of smaller cohorts replacing the baby boomers, those in the 'exiter' age group, is that aggregate incomes will be lowered; conversely, the disproportionately small number of younger workers replacing their elders can be expected to lower unemployment (Jackson, Rarere & Pawar, 2013).

An analysis of migration and commuting patterns formed part of a broader report by MartinJenkins and Infometrics (2016). The authors used Census 2013 and private data to map the regional sources of inward-migration. The results are displayed in Figure 2 and show that, by far, that most migration within the Bay of Plenty between 2006 and 2013 is migration within the region. Of note, 5.4 percent of the usually-resident population had migrated from overseas five years prior to the census (13,920 people), and 3 percent had migrated from both Auckland (7,770) and Waikato (7,821) respectively. Comparatively few usually-resident citizens had migrated from other regions.
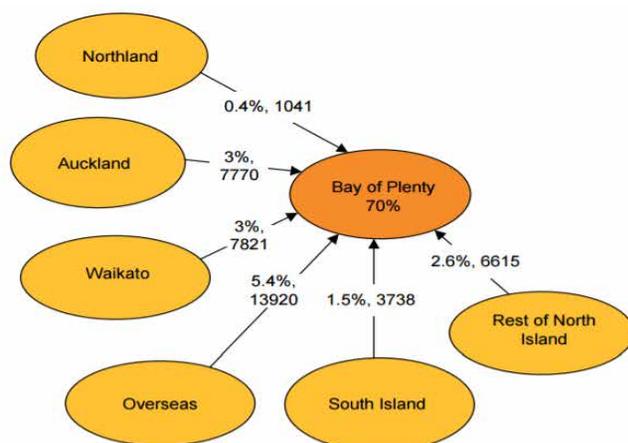
Source: MartinJenkins, based on Census 2013. Note that the proportions do not add up to 100 percent due to some residents not having been born five years earlier or respondents not defining their place of earlier residence.

The report concludes, therefore, that there is relatively little inter-regional commuting and relocation, especially in the short term. In the context of labour markets, this implies a degree of regional self-reliance is necessary in resolving acute skill shortages. Over longer time periods, regional net migration is positive.

4.2.2   Territorial Authorities

Research that measures and projects demographic change at the territorial authority level is most complete for Tauranga and the Western Bay of Plenty. All districts except for Tauranga and the Western Bay of Plenty are projected to experience either modest growth or modest declines until 2033, followed by rapid declines due to natural declines and negative net migration (Jackson, Cameron & Cochrane, 2014).

The 2014 NIDEA research produced baseline and stochastic projections for both territorial authorities up to 2063, producing near identical results and thereby lending confidence to the findings (Jackson, Cameron & Cochrane, 2014). In Tauranga, the population is projected to grow from 117,280 in 2013 to 161,646 in 2033 and 196,014 in 2063. By 2033 over one third of the city will be 65+, up from 19.5 percent in 2013. Between 2013-2033 those aged 65+ will constitute 71.8 percent of that population growth, while those 15-39 will contribute only 4.4 percent.

In the Western Bay of Plenty, the population grew from 26,900 in 1986 to 45,800 in 2013 (Jackson & Rarere, 2013). In their 2014 analysis, NIDEA projected Western Bay of Plenty's resident population to grow further to 57,546 in 2033 and then to 60,682 in 2063 (Jackson, Cameron & Cochrane, 2014). The marked drop-off in pace is due to natural decline rather than natural growth. Those in the 65+ age group will account for 85.8 percent of all growth between 2013-2063, while those aged 15-39 only 2.6 percent. Growth to date in the western Bay of Plenty has overwhelmingly been driven by positive net migration (Jackson &

Rarere, 2013). This has primarily been from those in the age bracket 30-69 years, while in more youthful age bands of 15-19 and 20-24 there have been net migration losses. The Western Bay of Plenty District has a larger proportion of those of European/New Zealand/Other ethnicity than either the Bay of Plenty Region or Total New Zealand, and a smaller proportion of both Māori and Pacific Island. The Western Bay of Plenty also has substantially fewer people defined as having Asian origin than the national composition, but slightly higher proportion than in the total Bay of Plenty Region. The ethnic proportions are not projected to change greatly over time, but age structures will change rapidly as the population ages and youth migrate.

In 2015, SmartGrowth (a joint initiative between Tauranga and Western Bay of Plenty councils, the Bay of Plenty Regional Council, and tangata whenua) conducted a comparison of NIDEA stochastic projections conducted by Jackson, Cameron & Cochrane (2014), and Statistics New Zealand projections from the 2013 census, for Tauranga and the Western Bay of Plenty (Summerhayes, 2015). NIDEA's stochastic projections fall approximately between Statistics New Zealand's medium and high projections on average, and SmartGrowth prefers these estimates. Because Statistics New Zealand reports to 2043 while NIDEA reports to 2063, the best point for comparison is 2033, in which NIDEA predicts a larger and older population than Statistics New Zealand for Tauranga, the Western Bay of Plenty, and the combined sub-region. In the NIDEA projection, under 39s increase in Tauranga over time and decrease in Western Bay of Plenty, but they approximately offset each other by 2063. In the under 15s/2033/Tauranga NIDEA projection, figures are 14 percent lower than the Statistics New Zealand figures, and in the under 39s this percentage difference rises to 24 percent. NIDEA projections for 2033 65+ populations are substantially higher for both Tauranga (63 percent higher) and Western Bay of Plenty (27 percent). Table 4 shows a comparison of projections for the broader Western Bay of Plenty sub-region.

Table 4: Comparison of Population Projections (NIDEA/Statistics NZ) Western BOP Sub-region

		2013	Additional Projected Population Combined						Total 2013-2043	% Increase from 2013	2053	2063	Total 2013 - 2063
			2018	2023	2028	2033	2038	2043					
Statistics New Zealand (February 2015 Update)	High		15,700	15,000	15,200	15,000	14,700	14,600	90,200	54.6%	N/A	N/A	
	Medium	165,300	11,600	10,500	10,200	9,800	9,100	8,600	59,800	36.2%	N/A	N/A	
	Low		7,600	5,800	5,300	4,600	3,700	2,900	29,900	18.1%	N/A	N/A	
SmartGrowth 2014 Projection (NIDEA)		163,390	12,328	14,680	14,762	13,921	11,431	7,940	75,062	45.9%	9,813	8,193	93,068

Territorial authorities in Eastern and Central Bay of Plenty are expected to experience only modest growth or declines until 2033, at which point decreases intensify apace (Jackson, Cameron & Cochrane, 2014). Of note for labour markets is the steep declines in labour market entry/exit ratios between 1996 and 2012 (Jackson, Rarere & Pawar 2013). The steepest declines were experienced by Kawerau (a 37.4 percent decline in the number of entrants to exiters), Whakatane (a 36.3 percent decline in the number of entrants to exiters), and Rotorua (a 35.5 percent decline in the number of entrants to exiters), compared to an average national decrease of 29.9 percent decline in the number of entrants to exiters. However, the entry/exit ratios for these districts still remain high in absolute terms; Kawerau, for instance, had the highest ratio in the region in 2012, at 14.1 labour market entrants for every 10 exiters.

According to baseline and stochastic projections (Jackson, Cameron and Cochrane 2014), Rotorua's population will experience slight growth from 68,590 in 2013 to 69,127 in 2033, then decline to 52,702 in 2063. Decline is due to both natural decline and negative net migration. While Rotorua is one of the youngest territorial authorities presently, it is rapidly ageing. The 65+ population constituted 13.4 percent in 2013, and is projected to expand to 25 percent in 2033, and 39.4 percent in 2063.

The NIDEA research also projects Whakatane to maintain a stable population until 2033 at around 33,408 residents, before a marked decline to 22,507 by 2063. The projected decline occurs by virtue of natural decline and negative net migration. Whakatane is projected to have a similar age structure to that of Rotorua.

Kawerau is expected to decline steadily from 6,710 residents in 2013 to 5,542 by 2033, then to 3,155 by 2063. Projections for Opotiki follow a similar pattern, with steady decline from 8,580 in 2013 to 7,395 in 2033, then continuing decline to 4,897 by 2063.

Taupo had a population of 29,027 in 1986, growing by 18.5 percent to 34,400 in 2013 (Jackson, 2014). Jackson's (2014) medium case scenario projects greatly slowed growth to 37,012 by 2033 (+8.4 percent), with all growth occurring at 65+ years. These estimates and projections are broadly corroborated in analyses by Cameron and Cochrane (2014), who find that under medium case assumptions, the population increases to a peak of 37,046 in 2035 before declining to 31,274 in 2063. Net migration decreases throughout the projection period, becoming negative in 2035, while natural increase becomes decrease in 2036. Figure 3 displays low, medium and high population projections for Taupo, with Statistics New Zealand projections for reference.
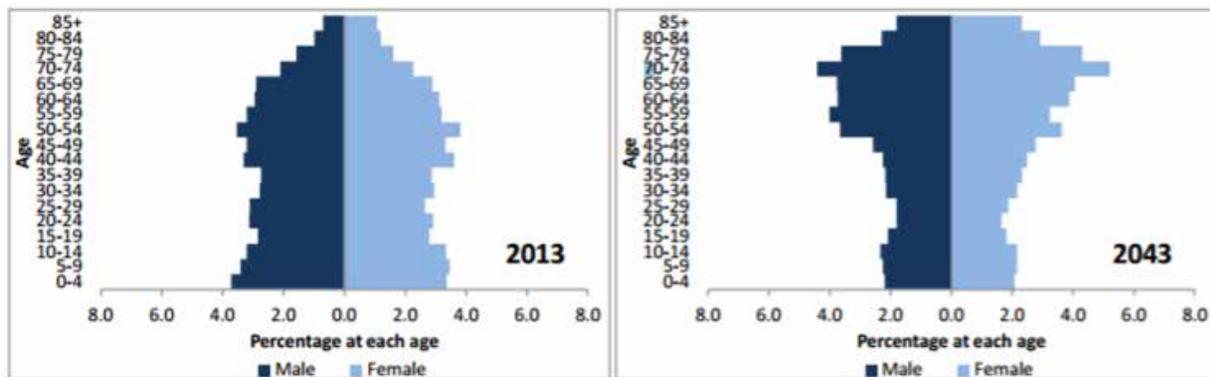
Figure 3: Population Projections for Taupo District, 2013-2063
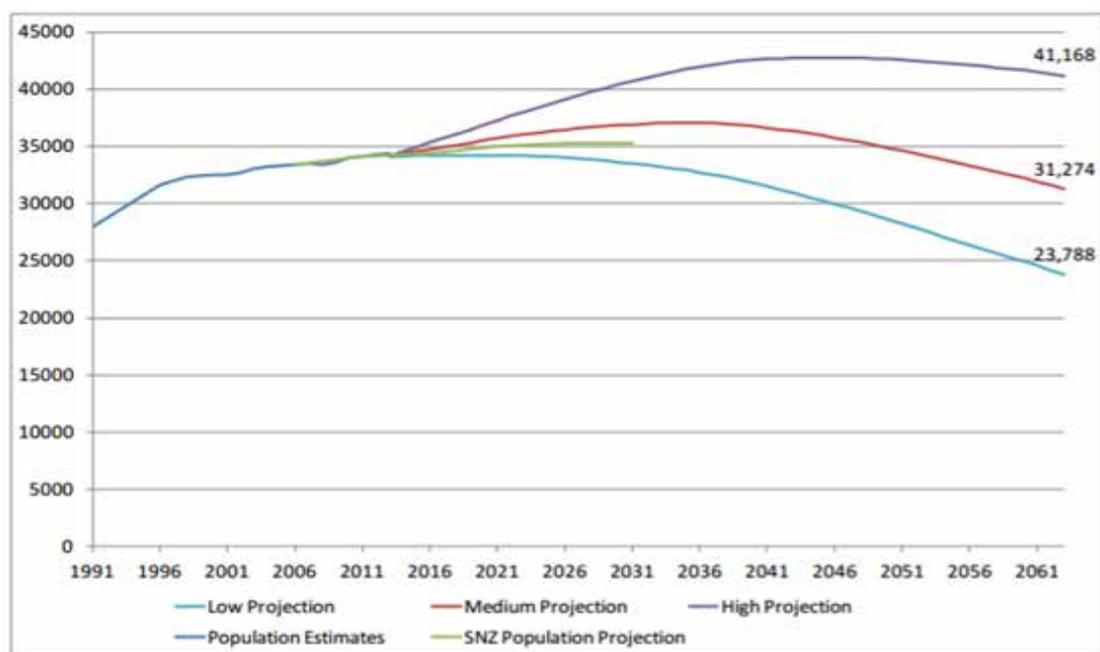
In 2013, 17 percent of the population were 65+, slightly older than national average of 14.2 percent (Jackson, 2014; Cameron & Cochrane, 2014). However, age structures between European (median age 43) and Maori (median age 26) populations differ markedly. Europeans accounted for 66 percent of the population and Maori 24 percent, compared to 65 percent and 13 percent nationally. By 2031, 27.3 percent of Taupo District is projected to be 65+, up from 15.6 percent in 2011. This is relatively typical of other territorial authorities. The district has consistently experienced net migration losses for ages 10-14, 15-19 and 20-24, but between 2008-2013, this also extended to those in their 40s and early 50s. The age-sex structure for Taupo district in 2013 and projected in 2043 is displayed in Figure 4.

Figure 4: Age-Sex Structure for Taupo District, 2013 and 2043 (Medium Projection)

The medium-assumption labour force projection for the Taupo district is displayed in Figure 5. From a base of 18,367 in 2013, the labour force is projected to increase at a rate of 0.94 percent per year until 2031. This rate is greater than population growth rate, due to the increased labour force participation rate among older people. After peaking at 21,966 people in 2033, it declines to 17,333 in 2063.

Figure 5: Labour Force Projection for Taupo District, 2013-2063
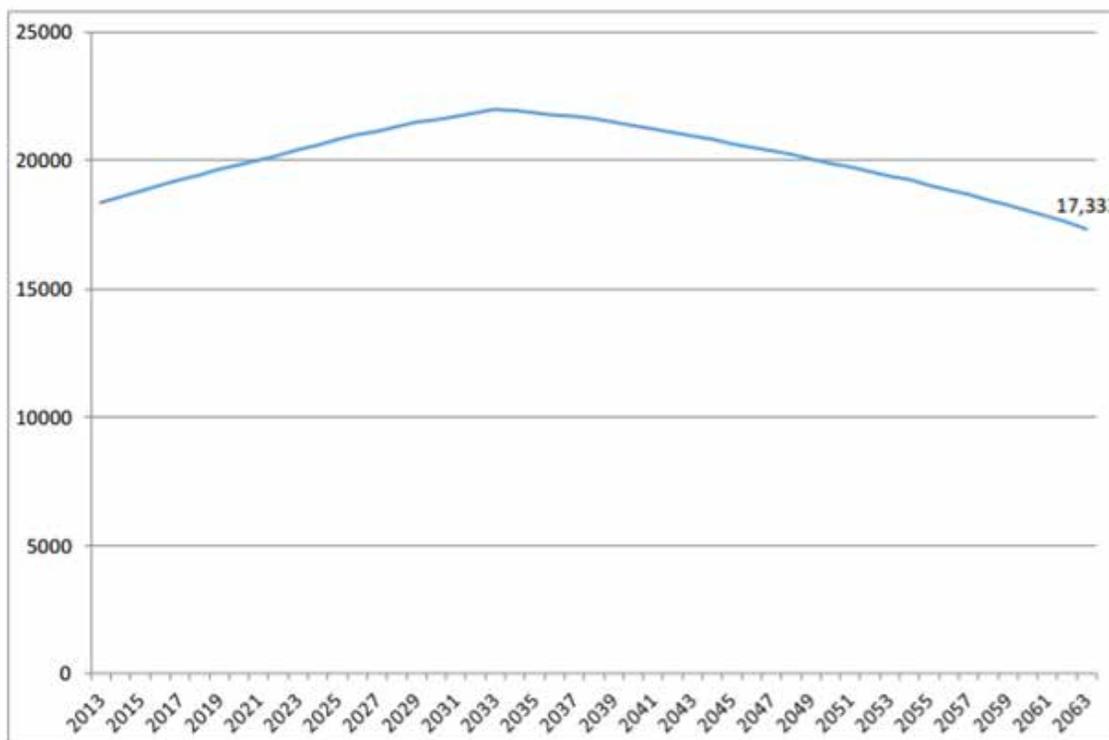
The Taupo District Council released a District Growth Model as part of the 2015-2025 long-term plan (Taupo District Council, 2015). Table 5 displays changes in labour market characteristics between the 2006 and 2013 census, using Statistics New Zealand census data. Overall, labour market conditions could be said to have held steady or deteriorated slightly between census years.

Table 5: Changes in Labour Market Characteristics, 2006 -2013, Taupo

	2006 Census	2013 Census
Labour Force	16,848	16,698
Total Unemployment	687	1,002
Total Employed	16,161	15,696
Total People	25,218	25,863
Not in Labour Force	7,188	7,989

One challenge for Taupo's labour market development and the provision of infrastructure is the high proportion of total dwellings not permanently occupied; totalling some 30 percent in the 2013 census. No adequate data exists measuring peak holiday traffic in Taupo, which varies annually. To gain a better understanding of holiday-related residence, the council has established a methodology involving obtaining area unit population estimates from Statistics New Zealand, and comparing these against wastewater flow data by individual plant over the same analysis period on a monthly basis. Using this methodology, the council estimates the 2013 population of 32,910 swells by 23,051 to 55,961 yearly, totalling an increase of over 70 percent during holiday periods.

5 SKILL DEVELOPMENT

When considering questions around labour market skill formation, the notion of 'skill' can be defined in two ways. The first refers to skills or qualifications required to gain employment, and the second to the actual competencies required to perform the tasks associated with the job, and these tend to be industry and employer specific (Keep, 2016). There is a range of literature covering skill formation and development, but it is primarily confined to the coverage of skills and qualifications rather than specific job competencies given that they are easier to measure and can be outlined by qualification type.

Across the Bay of Plenty region there is a varied level of performance on key education attainment measures, with the eastern sub-regions performing less well by comparison with central and western sub-regions. With around 25 percent of the region's residents not holding any formal qualifications and with only 15 percent holding NZQA L7 and above (for example a Bachelor degree or higher), the Bay of Plenty has a lower level of educational attainment than the national average. The Bay of Plenty ranks 10th highest out of 15 regions in terms of human capital per capita, with a correspondingly lower GDP per capita by comparison with other territorial regions (Eaqub & Stephenson, 2014). This is described as an outcome of the regional industry profile, and as a potential explanation of lower levels of productivity and labour force participation within the region.

One quarter of the region's workforce is employed in what are identified within the Bay of Connections framework as 'key industries'. Emerging technologies is the largest key industry at a regional level and is the most important in both Tauranga and Rotorua. Key industries vary district to district. For example, forestry is identified as the key industry in Kawerau and provides over half of the industry employment. The kiwifruit industry is the largest industry in the Western Bay of Plenty and Opotiki, while dairy is the most important key industry in Whakatane (Cox, Dixon & Schulze, 2014).

BERL analysis of the occupational profile and skill makeup of the labour force in the Bay of Plenty leads it to the conclude that there are three tiers within the regional labour market, Tauranga and the Western Bay in the top tier, Rotorua and Whakatane in the second tier and Kawerau which has a history of poor outcomes in the third tier (Cox, Dixon & Schulze, 2014). Opotiki is classified as sharing characteristics with the second and third tiers. Taupo was excluded from this classification.

Table 6: Labour demand in the Bay of Plenty, 2013, by Highest Educational Qualification

	Western Bay of Plenty District		Tauranga City		Rotorua District		Whakatane District		Kawerau District		Opotiki District		Bay of Plenty Region		Taupo District	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No Qualification	3,414	17%	6,936	14%	4,830	17%	2,379	18%	432	24%	762	24%	18,754	16%	2,820	18%
Level 1 to 4 Certificate Gained at School	7,005	34%	17,352	34%	9,279	33%	4,389	32%	540	31%	1,059	33%	39,626	34%	5,451	35%
Level 1, 2 or 3 Certificate Gained at School	747	4%	2,079	4%	1,086	4%	528	4%	69	4%	111	3%	4,620	4%	702	4%
Level 4 Certificate Gained Post-School	2,781	14%	6,717	13%	3,669	13%	1,926	14%	270	15%	366	12%	15,730	13%	2,184	14%
Level 5 or 6 Diploma	2,397	12%	5,805	11%	2,853	10%	1,377	10%	138	8%	309	10%	12,880	11%	1,548	10%
Bachelor Degree and Level 7 Qualifications	2,220	11%	7,266	14%	3,528	12%	1,632	12%	144	8%	249	8%	15,040	13%	1,572	10%
Post-Graduate Qualifications	876	4%	2,763	5%	1,548	5%	600	4%	27	2%	93	3%	5,907	5%	603	4%
Other	897	4%	1,986	4%	1,566	6%	750	6%	144	8%	222	7%	5,565	5%	816	5%
Total	20,337	100%	50,904	100%	28,356	100%	13,593	100%	1,767	100%	3,174	100%	118,136	100%	15,696	100%

Source: Statistics New Zealand Census 2013, BERL

Table 7: Change in Unemployed Labour in the Bay of Plenty, 2006-2013, by Highest Educational Qualification

	Western Bay of Plenty District		Tauranga City		Rotorua District		Whakatane District		Kawerau District		Opotiki District		Bay of Plenty Region		Taupo District	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No Qualification	66	21%	159	21%	84	11%	0	0%	54	35%	-48	-28%	315	12%	51	21%
Level 1 to 4 Certificate Gained at School	300	91%	789	94%	453	73%	237	74%	66	61%	48	57%	1,893	82%	162	84%
Level 1, 2 or 3 Certificate Gained at School	51	77%	75	33%	21	11%	9	8%	6	18%	-6	-17%	156	23%	18	43%
Level 4 Certificate Gained Post-School	60	100%	117	56%	141	96%	51	55%	33	157%	15	83%	417	76%	21	41%
Level 5 or 6 Diploma	51	89%	132	83%	84	122%	42	100%	21	700%	3	20%	333	96%	15	42%
Bachelor Degree and Level 7 Qualifications	45	115%	156	104%	123	158%	33	85%	9	150%	6	100%	372	117%	12	57%
Post-Graduate Qualifications	12	67%	87	264%	12	40%	12	200%	6	0%	0	0%	129	143%	9	150%
Other	30	31%	54	22%	48	19%	45	31%	9	18%	9	27%	195	23%	30	32%
Total	615	63%	1,572	60%	966	44%	435	35%	204	54%	24	7%	3,816	49%	312	45%

Source: Statistics New Zealand Census 2013, BERL

Table 8: Unemployment by Ethnicity and District 2013

	Western Bay of Plenty District		Tauranga City		Rotorua District		Whakatane District		Kawerau District		Opotiki District		Bay of Plenty Region		Taupo District	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Maori	576	36%	1,329	32%	1,908	61%	1,200	71%	453	77%	318	81%	5,787	50%	528	53%
Non-Maori	1,014	64%	2,871	68%	1,230	39%	486	29%	132	23%	75	19%	5,810	50%	474	47%
Total	1,590	100%	4,200	100%	3,138	100%	1,686	100%	585	100%	393	100%	11,597	100%	1,002	100%

Source: Statistics New Zealand Census 2013, BERL

These tiers are reflected in the profile of educational attainment across the region. Across the region as a whole, virtually one-fifth of those employed (18%) have a degree or higher qualification. This proportion, however, is much lower in in some areas, as in Kawerau (10%) and Opotiki (11%). Those with no qualifications make up half of those in employment across the region, by comparison, have no qualifications (16%) or school qualifications only (34%) (Cox, Dixon & Schulze, 2014, p.7). Kawerau and Opotiki are notable for the higher proportion of those in employment without qualifications. Taupo's qualification profile is described as being similar to that of the Bay of Plenty region as a whole.

Unemployment rates across the Bay of Plenty region, by district, according to the 2013 census were:

- Western Bay of Plenty 7.2%
- Tauranga 7.6%
- Rotorua 10.0%
- Whakatane 11.0%
- Kawerau 24.9%
- Opotiki 11.0% (Cox, Dixon & Schulze 2014).

Again, the pattern of unemployment reflects the three tier structure of the labour market referred to above. The unemployed have lower skill levels than the employed with two thirds having no qualifications or only school level qualifications (verses half for the employed). The increase in unemployment among those

with Level 4 certificates gained in post-school education and training also deserves attention. Level 4 qualifications tend to have a practical orientation directed towards trades or administrative work, suggesting a lack of alignment between available education programmes and labour market skill needs.

The BERL report notes inequities between Maori and non-Maori, skilled and unskilled, and younger and older workers, and suggests that action to address these issues is justifiable not just in terms of equity but also in terms of efficiency (Cox, Dixon & Schulze, 2014). Maori have an unemployment rate of 19 percent by comparison with 5.9 percent for non-Maori and, on the whole, 50 percent of those unemployed are Maori and 50 percent are Non-Maori.

Youth unemployment is a considerable problem with 30.8 percent of 15-19 year olds unemployed (Cox, Dixon & Shulze, 2014). Nearly half all those unemployed were under the age of 35. Bay of Plenty youth 'not in employment, education or training' (NEET) is high at around 16 percent, compared to national average of approximately 11 percent (MartinJenkins & Infometrics, 2016). Among Bay of Plenty school leavers, 47 percent had NCEA level 3 or UE, while 82 percent had at least NCEA level 2 (close to national average of 83 percent).

Finally, while the outcomes in the 2006-2013 period were relatively negative, medium term to long term employment in the region is projected to increase in the majority of industries. In conjunction with NIDEA's labour force projections, BERL's employment projections for the region imply an increase in employment levels and a decrease in unemployment (Cox, Dixon & Schulze, 2014).

5.1 OCCUPATIONAL CHANGE

Research that analyses trends in occupational change suggests the provision of qualifications does not ensure alignment with the current skills needs in the region. Skill shortages are evident in key areas, as is an apparent oversupply of qualified labour in others. Managers and professionals make up the largest major occupational groups across the region, and in most districts, except for Kawerau and Opotiki where labourers make up the largest group. Demand for managerial or professional roles, however, has grown at a slower rate in the Bay of Plenty than in New Zealand at large. With a 2.2 percent decline in managerial roles (see Table 9), the region diverges from the national trend, while job growth for professionals, while growing significantly, is below the national average (Cox, Dixon & Schulze, 2014).

Table 9: Change in Employment by Occupation, BOP and New Zealand, 2006 -2013

Occupation	Bay of Plenty Region		Total New Zealand	
	N	%	N	%
Managers	-474	-2.2%	15,543	4.6%
Professionals	2,235	11.4%	52,365	14.0%
Technicians and Trade Workers	-1,752	-11.3%	-14,037	-5.8%
Community & Personal Service Workers	1,203	12.9%	14,565	9.3%
Clerical and Admin Workers	-630	-4.7%	-12,816	-5.3%
Sales Workers	-888	-8.0%	-9,243	-5.0%
Machinery Operators and Drivers	-471	-6.4%	-10,749	-9.4%
Labourers	-375	-2.5%	-8,397	-3.8%
Other	-1,125	-16.2%	-11,997	-10.7%
Total	**-2,253**	**-1.9%**	**15,228**	**0.8%**

Source: Statistics New Zealand Census 2013, BERL

The *Toi Moana Bay of Plenty Growth Study* by MBIE and the Ministry for Primary Industries (MPI) (2015) indicated the region accounts for 6.6 percent of the nation's employment and has seen a decline in employme4*Toi Moana Bay of Plenty Growth Study* outlines current skill shortages as follows:

> "*There are general shortages in a wide range of areas, which include, among others, mechanics, technicians, middle management staff, project managers, ICT specialists, farm managers, forestry workers, and drivers. While the Bay of Plenty's smaller proportion of working age people than the neighbouring Auckland and Waikato regions may contribute to the skill shortage, the relatively limited provision of local and regional tertiary training has been cited by businesses as one of the key issues*" (MBIE & MPI 2015, p.175).

Recently, at least at a regional level, MBIE have begun to provide short term projections of labour demand at both an industry and occupational level (MBIE, 2017b). The occupational projections are broadly in accord with the growth sectors identified by Cox, Dixon & Schulze (2014). The projections are not included here for reasons of space but maybe obtained on the MBIE website.

6   INDUSTRY GROWTH

The Regional Economic Activity Report by MBIE (2015) lists the Bay of Plenty's areas of regional strength 'agriculture', 'forestry and logging', 'wood manufacturing', 'horticulture' and 'administrative and support services' (MBIE, 2015, p.31). While these sectors make a significant contribution to the region's employment, job growth has only occurred in 'agriculture' and 'administrative and support services', while employment growth has reduced in the other key industries with 'wood manufacturing' seeing growth of -3.1 percent between 2005-2015 (MBIE, 2015).

Demographic changes pose challenges for industry growth, with Jackson & Rarere (2013) noting the age structure changes from 1996-2006 in the four largest industries (school education, horticulture and fruit growing, building and construction, and supermarkets and grocery stores). They found that three of the four largest industries in the region have workforces with somewhat older age structures by comparison with the total workforce, uppermost among them being 'horticulture and fruit growing', pointing to an emerging need to engage in workforce succession planning. Only 'supermarkets and grocery stores' had a relatively youthful workforce (Refer Table 11).

The *Upper North Island Key Sector Trends* report prepared by MartinJenkins and Infometrics (2016) defined key sectors where there was a likelihood of strong growth and new job openings were expected. These included: 'business and professional services', 'construction and construction-related services', 'dairy and related processing', 'forestry and wood processing', 'freight and logistics', 'health services and residential care', and 'tourism'. These were described as constituting areas of ongoing labour demand. While this report gives some aspirational projections around potential job openings (see Table 10), these figures are subject to considerable uncertainty and assumes technology and other disruptive events are held constant.

Table 10: Projected Job Openings by Sector and Region, Upper North Island 2016 - 2020

Sector	Northland	Auckland	Waikato	Bay of Plenty	Total UNI
Forestry & Wood Processing	443	606	726	801	2,576
Dairy & Related Processing	428	596	2,439	1,133	4,597
Construction & Construction-Related Services	2,723	42,408	8,893	7,044	61,069
Business & Professional Services	1,456	35,202	5,428	4,682	46,767
Food & Beverage Cultivation & Processing	312	3,916	821	1,542	6,591
Health Services & Residential Care	2,029	19,368	4,729	5,139	31,265
Freight & Logistics	871	21,730	2,945	2,339	27,885
Tourism	1,351	18,231	5,201	3,525	28,397
All Key Sectors	**9,613**	**142,146**	**31,182**	**26,206**	209,147

Source: Infometrics

With GDP per capita in the region lower than the national average (MBIE, 2016), unemployment rates higher, and rates of employment growth lower than the national average, the Bay of Connections Sector Strategies provide aspirational targets, aimed at better developing the region. 'Health services', 'marketing and business management services', 'services to agriculture' and 'tertiary education' are the sectors that have seen the highest rates of employment growth in the region.

Table 11: Bay of Plenty Industries Employing Over 1000 Persons in 2006, Number, Average Age and Percentage Change 1996-2006 (Ranked Largest to Smallest in 2006)

Bay of Plenty Region	Number Employed			% Change 1996-2006	Average Age (in years)			% Change 1996-2006
	1996	2001	2006		1996	2001	2006	
School Education	4,077	5,100	5,277	+29.4	42.8	43.8	45.1	+5.3
Horticulture & Fruit Growing	3,501	3,516	3,489	-0.3	44.8	47.1	48.7	+8.5
Building Construction	1,986	1,959	3,330	+67.7	38.8	41.3	40.4	+4.3
Supermarket & Grocery Stores	2,349	2,670	3,084	+31.3	29.9	31.6	33.3	+11.1
Cafes & Restaurants	1,884	2,319	2,886	+53.2	31.3	31.0	32.0	+2.2
Hospitals & Nursing Homes	2,622	2,631	2,859	+9.0	41.3	42.7	44.9	+8.7
Community Care Services	1,539	2,460	2,859	+85.8	41.8	45.0	47.4	+13.5
Motor Vehicle Services	2,340	2,349	2,589	+10.6	34.6	37.0	39.1	+12.7
Other Health Services	924	2,169	2,565	+177.6	42.5	44.6	45.5	+6.9
Government Administration	2,523	2,274	2,508	-0.6	41	43.7	44.5	+8.6
Other Personal & Household Good Retailing	1,623	1,899	2,325	+43.3	39.7	41.1	42.5	+6.9
Accomodation	1,944	2,175	2,286	+17.6	38.3	40.7	41.9	+9.5
Marketing & Business Management Services	852	1,665	2,241	+163.0	40.2	40.8	43.5	+8.0
Other Business Services	1,407	1,674	2,235	+58.8	39.5	41.6	43.3	+9.5
Specialised Food Retailing	1,944	1,974	2,115	+8.8	34.3	34.0	34.5	+0.7
Dairy Cattle Farming	2,484	2,262	2,055	-17.3	39.4	41.5	42.5	+7.8
Other Personal Services	1,698	1,644	2,049	+20.7	37.2	40.1	40.8	+9.7
Services to Agriculture	849	1,551	2,034	+139.6	38.5	42.3	44.0	+14.3
Installation Trade Services	1,206	1,542	2,028	+68.2	38.1	40.3	41.3	+8.6
Legal & Accounting Services	1,401	1,527	1,947	+39.0	39.1	41.4	43.3	+10.9
Building Completion Services	1,167	1,311	1,794	+53.7	37.3	38.9	39.3	+5.5
Road Freight Transport	1,302	1,398	1,677	+28.8	39.2	41.4	44.3	+13.0
Industrial Machinery & Equipment Manufacturing	1,260	1,455	1,620	+28.6	37.2	39.6	42.0	+13.0
Technical Services	846	978	1,608	+90.1	39.3	41.9	42.5	+8.0
Real Estate Agents	969	969	1,485	+53.3	44.7	46.6	47.5	+6.2
Log Sawmilling & Timber Dressing	1,329	1,584	1,422	+7.0	35.3	37.0	39.4	+11.4
Furniture, Houseware & Appliance Retailing	999	1,020	1,419	+42.0	39.0	40.6	39.2	+0.5
Property Operators & Developers	867	1,068	1,407	+62.3	43.0	46.8	46.6	+8.2
Medical & Dental Services	864	1,125	1,398	+61.8	42.4	44.1	45.7	+7.9
Non-Building Construction	822	1,023	1,383	+68.2	39.4	40.8	42.0	+6.5
Forestry & Logging	1,932	1,542	1,242	-35.7	34.5	36.1	39.6	+14.8
Paper & Paper Product Manufacturing	1,875	1,581	1,236	-34.1	41.4	43.4	45.8	+10.7
Other Education	687	903	1,176	+71.2	41.4	42.5	45.0	+8.5
Grain, Sheep & Beef Cattle Farming	1,050	921	1,146	+9.1	46.8	47.9	49.7	+6.1
Builders Supplies Wholesaling	885	954	1,140	+28.8	38.0	40.3	41.2	+8.5
Clothing & Soft Good Retailing	936	867	1,119	+19.6	40.4	42.2	40.2	-0.6

Machinery & Equipment Wholesaling	816	1,062	1,092	**+33.8**	38.2	40.1	41.4	**+8.3**
Deposit Taking Financiers	1,011	840	1,068	**+5.6**	37.0	40.3	41.6	**+12.4**
Public Order & Safety Services	774	843	1,026	**+32.6**	39.4	40.8	43.2	**+9.5**
Post School Education	486	729	1,011	**+108.0**	42.1	43.5	44.9	**+6.6**
Industries Employing over 1,000 persons in 2006	60,030	67,533	79,230	**+32.0**				
Bay of Plenty Region: Total Employed Labour Force	91,767	100,755	118,473	**+29.1**	39.1	41.1	42.3	**+8.2**

As noted earlier MBIE provide short term projections of labour demand at an industry level providing a consistent approach to the estimation of local labour demand (MBIE, 2017b). Table 12 shows MBIE's projection of Industry employment levels for the Bay of Plenty 2017-2020. These projections are broadly in line with the growth sectors identified in MartinJenkins and Infometrics (2016).

Table 12: Projected Industry Employment, Bay of Plenty Region 2017-2020

Regional Industry Employment Levels	2017	2018	2019	2020
Agriculture	13,461	13,403	13,213	13,362
Fishing	167	173	177	180
Forestry and Logging	1,002	936	858	832
Mining and Quarrying	172	146	120	95
Food, Beverage and Tobacco Manufacturing	3,887	3,911	3,844	3,945
Textiles and Apparel Manufacturing	455	463	468	472
Wood and Paper Products Manufacturing	3,416	3,418	3,299	3,250
Printing, Publishing and Recorded Media	1,000	965	922	880
Chemicals Manufacturing	1,089	1,103	1,107	1,121
Non-Metallic Mineral Products Manufacturing	319	317	308	294
Metal Product Manufacturing	1,475	1,484	1,478	1,464
Machinery and Equipment Manufacturing	2,467	2,533	2,530	2,522
Furniture and Other Manufacturing	513	505	496	484
Electricity, Gas and Water Supply	1,165	1,183	1,196	1,181
Construction	14,282	15,146	16,009	16,560
Wholesale Trade	5,299	5,350	5,368	5,220
Retail Trade (including Motor Vehicle Repairs)	13,327	13,908	14,108	14,021
Accommodation, Cafes and Restaurants	7,788	7,653	7,449	7,198
Transport and Storage	6,368	6,297	6,199	6,202
Communication Services	387	364	377	352
Finance and Insurance	2,451	2,379	2,300	2,222
Property Services	2,826	2,723	2,615	2,647
Business Services	17,225	17,745	18,379	19,237
Government Admin. and Defence	9,466	9,408	9,217	9,077
Education	12,872	12,917	13,220	13,425
Health and Community Services	17,770	18,262	18,836	19,346
Cultural and Recreational Services	2,831	2,891	2,934	2,997
Personal and Other Community Services	6,569	6,632	6,869	6,955
Total	**150,049**	**152,217**	**153,896**	**155,541**

Source MBIE (2017b)

6.1 SECTOR STRATEGIES

The Bay of Connections is a regional growth strategy for the wider Bay of Plenty, with a vision of creating a prosperous region supported by sustainable sectors (Bay of Connections, 2017). In 2014, Central Government partnered with the Bay of Connections to create a regional growth strategy for the wider Bay of Plenty. As part of developing a plan, a series of stakeholder meetings were held in order to prioritize the short to medium term opportunities outlined in the strategy (Leeder & Marshall, 2015).

As a result of the consultation process across the region, nine key areas were prioritised by and development strategies were outlined in an Economic Action Plan (Leeder & Marshall, 2015). These key areas included the 'agribusiness', 'aquaculture', 'tertiary education and skills', 'forestry and wood processing', 'geothermal', 'horticulture', 'Maori land utilization', 'visitor economy' and 'water management' (Leeder & Marshall, 2015). Each of these sector strategies identified key partners and timeframes were assigned.

Of these sectors, 'agribusiness', 'aquaculture' and the 'visitor economy' have received considerable attention in the research surveyed above. The agribusiness strategy which focuses on expanding awareness about alternative land uses (for example dairy goat and sheep milking), and on promoting Manuka honey by identifying suitable strains for expanding the industry within the region and increasing plantation sizes, aligns well with the job growth that has been seen in services to agriculture (Leeder & Marshall, 2015; Jackson, Rarere & Pawar, 2013).

Aquaculture has been the focus of research in Opotiki, and this initiative accounts for much of the Bay of Connections strategy in this industry, though an increase in commercial trout farming is also a goal (Leeder & Marshall, 2015).

The education and skills sector strategy aims to better connect, and train local people for local jobs by helping students, education providers and community leaders understand the labour market needs of the region. The focus of the strategy aims to better connect education and industry by providing more regionally relevant courses and develop a workforce for the horticulture and aquaculture industries (Leeder & Marshall, 2015; Cox, Dixon and Schulze, 2014).

The forestry and wood processing strategy focuses on improving market access for manufactured wood products and increasing afforestation in the region (Leeder & Marshall, 2015). Key to both the geothermal and horticultural strategies is the unlocking of Maori land. Maori land utilization and unlocking access to Maori land make up a significant part of the Bay of Connections Maori development strategy, which notes that at present Maori contribute 11 percent to regional GDP, with that expected to grow by between 10-30percent within the decade (Leeder & Marshall, 2015).

The plan also focuses on the visitor economy where the aim is to increase tourist numbers by investment in cycling facilities and by implementing the Bay of Plenty wellness strategy, as well as developing collaborative regional tourism mechanisms to support the growth of the visitor economy by $2.5 billion by 2030. Finally, the last section covers water use and discusses increasing bottled water exports, increasing data quality around water use and developing irrigation (Leeder & Marshall, 2015).

The *Bay of Plenty Economic Scenarios – Exploring Alternative Futures* report, considers three scenarios for sector economic and employment growth in the region (See Figure 6; Slack & Schulze, 2013). The first is the business as usual (BAU) scenario, this based on well recognized data and forecasting sets. The second scenario is the strategy stretch target, and its assumptions are based on effectively implementing the Bay of Connections sector growth strategies. The third scenario is a reality check and is based on the prospects of exogenous factors influencing the economic growth potential of the region (Slack & Schulze, 2013). In scenario 1) employment is expected to grow steadily as will regional GDP. It is expected that 480 jobs will be added to the labour market in key industries. In Scenario 2) GDP in key areas will grow significantly and 1,010 jobs will be added to the labour market in these key areas. In Scenario 3) GDP growth will be lower than in scenario 2) and 750 jobs will be added to the labour market in the key areas.

Figure 6: Key Sector Employment (FTE) by Scenario 2012-2022, Bay of Plenty
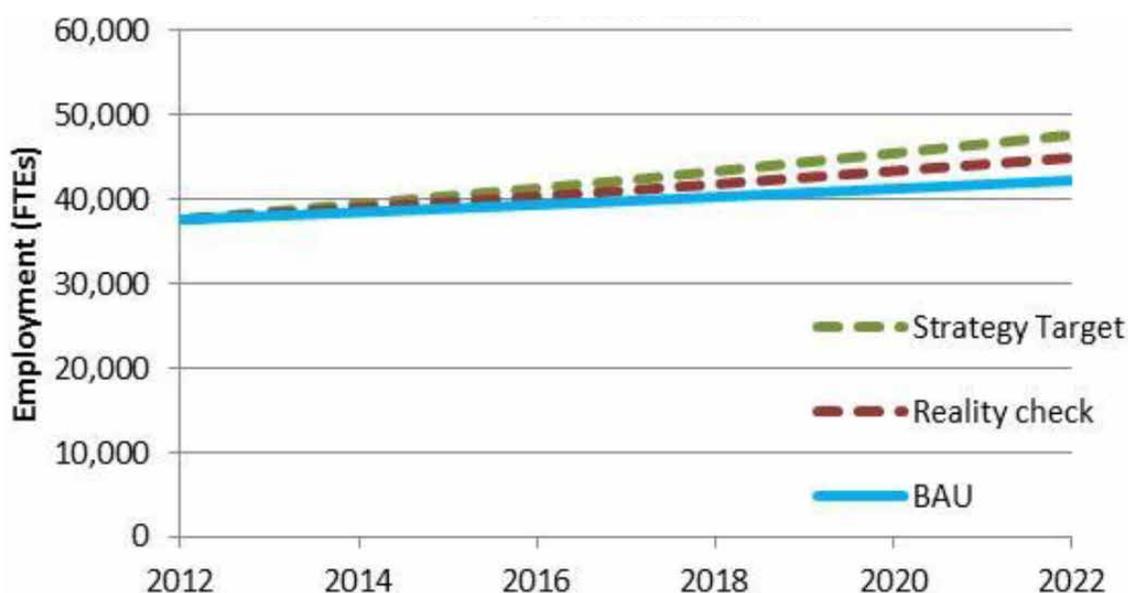
In order to demonstrate the value of these sector strategies, Bay of Connections commissioned a report to provide an employment scenario to 2022 based on the successful implementation of the BOC strategy. The Bay of Connections Scenario is aspirational. Its goal is to deliver an outcome over and above business as usual. The scenario outcome therefore needs to result in additional employment greater that what would be achieved if it were not implemented (Leung-Wai, 2013). The BAU scenario was developed by BERL and forms the baseline from which the strategy scenario is determined. BERL also developed two further scenarios – strategy stretch and reality check, which are covered in the previous report.

Figure 7: Bay of Connections, Employment Effects

Source: MartinJenkins
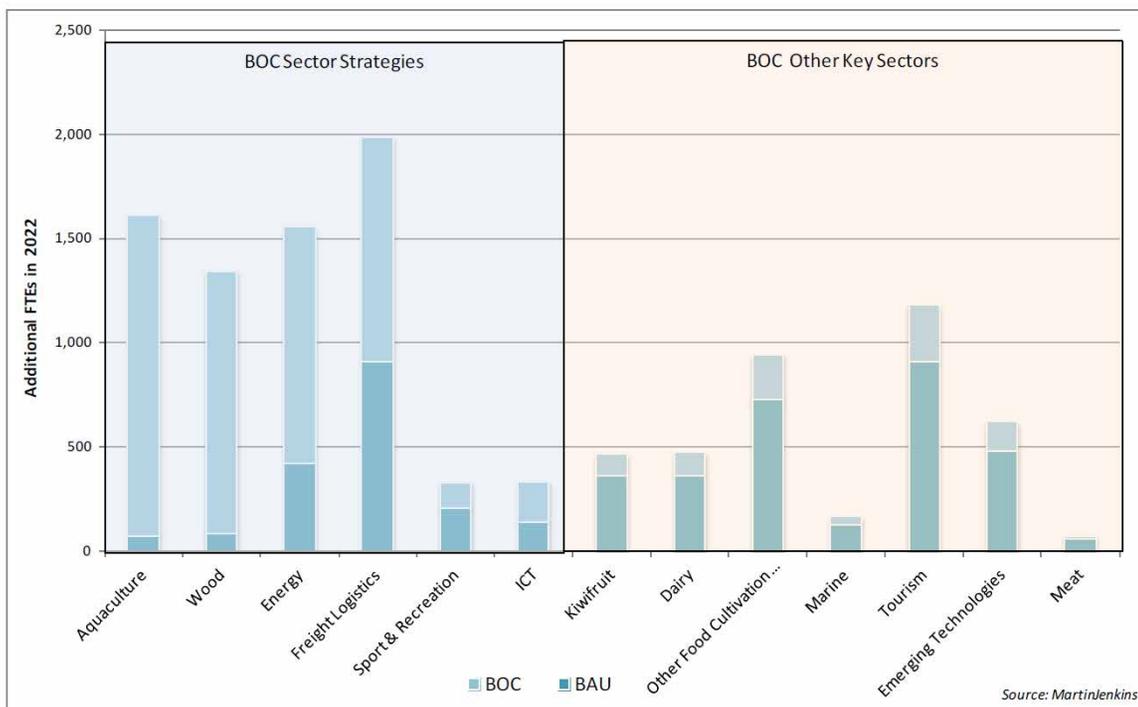
The Leung-Wai, 2013 report indicates that projected job growth in areas covered by the sector strategies would attribute the majority (and in the case of wood and aquaculture, almost all) employment growth due to the strategies.

The Bay of Connections strategy document provides up to date literature and tracks progress through their annual reports. The 2016 Annual Report lists a number of major and relatively minor highlights for each sector, most notably from the labour market perspective the merger between Bay of Plenty Polytechnic and the Wairiki Institute of Technology to create the Toi-Ohomai Institute of Technology; and the agreement between regional funders (Bay of Plenty Regional Council, Tauranga City Council and Tauranga Energy Consumers Trust) and University of Waikato (on behalf of the Bay of Plenty Tertiary Partnership) to develop a university-led campus in Tauranga.

7   DISCUSSION

The publications reviewed here have been produced by various consultancies and governmental or council-affiliated organisations. The intended audiences are commonly non-experts, and as such, preference is given to accessibility over rigour. There is a notable gap in terms of independent, methodologically rigorous, and peer-reviewed analyses of labour market features in the Bay of Plenty.

Economic indicators such as GDP per capita are much more reliable at the national level in New Zealand rather than at regional level. The calculation of such metrics at a regional level is typically based on sets of regionally specific assumptions, rather than direct measurements. Such indicators should, therefore, not be interpreted with the same level of confidence as national estimates.

Some of the resources reviewed, such as ANZ's *Regional Trends* and BERL's *Regional rankings* were periodical publications. These publications are not available on a consistent basis, particularly over recent years, thereby limiting the ability to monitor trends and developments. Nevertheless, the ability to track changes through these publications over time proved useful. For example, ANZ's 2014 report showed a large reversal of what had predominantly been negative trends in the preceding years, while the Bay of Plenty's regional rankings in BERL's showed significant volatility, contrary to expectations. In the case of BERL's regional rankings, the disruptive event of the PSA kiwifruit virus caused a large and unexpected shock to the labour market. These results demonstrate the difficulty in projecting future events from past trends. Given that disruptive events can significantly alter the trajectory of economic development, projected trends become increasingly prone to error the further out in time they are, given that they require an increasingly unlikely adherence to initial assumptions.

Research on demographic trends was subject to overreliance on the 2013 Census. This means that the quality of the analyses is contingent in large part on the merits and shortcomings of the census.

An important limitation of census data is its frequency of measurement. The validity of assumptions made based on census data decreases each year during the intercensal period, as it becomes increasingly likely that demographic characteristics in the given year significantly differ from those in the census year. Disruptive political and economic events can substantially and unpredictably alter, for example, decisions about where to live and work; however, these altered behaviours will not be displayed in census data until the next census wave. Nevertheless, there is reason to be relatively confident with the broader long-term trends in demography. It is only a matter of time, for example, that fertility rates will drop below replacement level in New Zealand, regardless of the specific timing. Similarly, the broad trend of ageing populations is robust across all specifications in demographic modelling, meaning there is ample justification for secession planning and so on. Again, information at territorial authority level is sparse in comparison to broader-level trends, albeit to a lesser extent than literature on economic indicators.

Considering that the Bay of Connections strategic publications note that the education sector is a significant employer in the region and that improving skill levels is key to productive growth, there was a reasonable amount of literature that covered skill formation. The Cox, Dixon & Schulze (2014) report prepared by BERL noted that while the unemployment rate was higher for those who lacked formal qualification, it is growing even for those with formal qualifications. This indicates that there is a skills mismatch, specifically at degree level where unemployment has risen for L7 or Bachelor's degree graduates and postgraduates.

The sectors covered by the Bay of Connections Sector Strategies will require technically skilled and specialized staff. Further research that identifies not just the kind of roles that will be in demand as well as the relevant qualifications would be of significant value. At the territorial authority level, Taupo District Council has information comparing the educational composition of the district between the 2006 and 2013 census, noting a rise in the number of degree educated workers (Taupo District Council, 2013). Many of this group may lack the relevant qualifications and skills for the expected growth identified in the sector strategies, despite being qualified. Without more information, it is difficult to provide any commentary about these risks or identify workers who could be retrained or upskilled to meet the projected needs.

While occupational change in the eight ANZSCO major groups is covered in Table 9, there is a shortage of any more specific data. This limits the ability for existing reports to provide specific commentary about what skills shortages translate to in occupational terms. It is also limiting in the sense that the job growth in major groups, specifically in the Community and Personal Service worker category cannot be broken down into high paying and low paying occupations. Growth in the is major group may be due to younger workers entering the service sector by filling poorly paid and insecure roles in the tourism and aged care industry as opposed to entering the more secure and well paid occupations within this group

In order to address this shortage of information, new research that analyses occupational change in more detail, focussing on sub-major, minor and unit groups, would enable more accurate analyses of occupational change and the potential opportunities and threats to the region's occupants. While the Cox, Dixon and Schulze (2014) report contains specific mention of increasing demand for some job types, reference to roles like technicians and

forestry workers are not in line with the findings in the rest of this report. Job growth has been limited for forestry workers and indeed job growth for those working in wood processing has fallen. The occupational change in the surveyed period led to a -11.3 percent growth rate for Technical and Trades workers, so further, more specific information is needed to aid succession planning at an industry level.

There has been notable growth in the agricultural and administrative and support services sector, while traditionally strong sectors like forestry and wood processing have seen poorer prospects (MBIE, 2015). Leung-Wai (2013) projects that anticipated job growth in the Bay of Connections strategy would account for almost all growth in both wood manufacturing and aquaculture, considering the business as usual projections show very low growth. For industries that are in decline, meeting the training and skill needs to fulfil the Bay of Connections expectations will be problematic, especially since employers cannot rely on inward migration to meet skill shortages.

Further research addressing succession planning is essential since of the largest industries only 'supermarket and grocery workers' have a relatively youthful workforce (Jackson & Rarere, 2013). The ageing workforce and the gravitation of younger workers towards the service sector and professional services will pose challenges, especially since most of the areas of expected job growth in the Bay of Connections sector strategies are in industries and roles that lack a youthful workforce. With the Bay of Connections sector strategies expected to deliver better growth than either the business as usual or strategy stretch model, most literature has been supportive of the strategies and has confirmed their viability, although more recent sector strategies publications have not addressed some of the challenges around redeploying the workforce to meet the skills needs of projects.

The sector strategies also seem to be broad and do not contain a sequential plan which, through its implementation, will lead to the projected successes. One notable absence from much of the literature is a clear set of strategies for those sectors outside the Bay of Connections framework. Because the 'administrative and support services sector' is one of the largest sources of employment in the region, it appears anomalous that that industry is largely overlooked in the reviewed literature. While more opportunities for growth might exist in the areas identified in the Bay of Connections, a number of sectors that account for a considerable amount of employment have received little consideration. Finally, while the Bay of Connections Annual Reports show notable progress towards the goals outlined in the BOP regional growth programme sector strategies, many of the action points or indicators of success are quite small, although it is noted that these strategies are still in the early days of implementation.

The substantive findings of this review on labour market development in the Bay of Plenty should be carefully examined in the context of how the knowledge was produced. This section discusses the literature body as a whole, as well as identifying strengths and weaknesses in particular areas.

8   CONCLUSION

While quality research on economic development and labour markets has been produced for some territorial authorities, there was an overall lack of information at territorial authority level on most issues within the Bay of Plenty regions. There do not appear to be concise plans for regional growth outside the Bay of Connections literature, although that strategy does outline a very broad set of initiatives that cover key industries and it seems to have significant support from industry. Scholarship on economic development does indicate that effective skill formation is key to growth, and further research about occupational change and anticipated skill needs would provide a better profile of where to invest in education and training. At the current level of aggregation, the available data provides limited information about the quality of recent job growth.

The Bay of Connections sector strategies while at times vague indicate a much more collaborative approach than that which is taken in other regions and seems to enjoy strong industry input and endorsement. With an ageing workforce, and with limited evidence of succession planning, there is a need for up-to-date research on how imminent demographic changes will have an impact on economic growth. Projected occupational changes do not seem to correspond well with the Bay of Connections sector strategies, indicating that while there may be a shortage of technicians, trades, qualified artisans and technical managers, job growth has largely been in the service sector and professional services.

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