Bay of Plenty situational analysis

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Background

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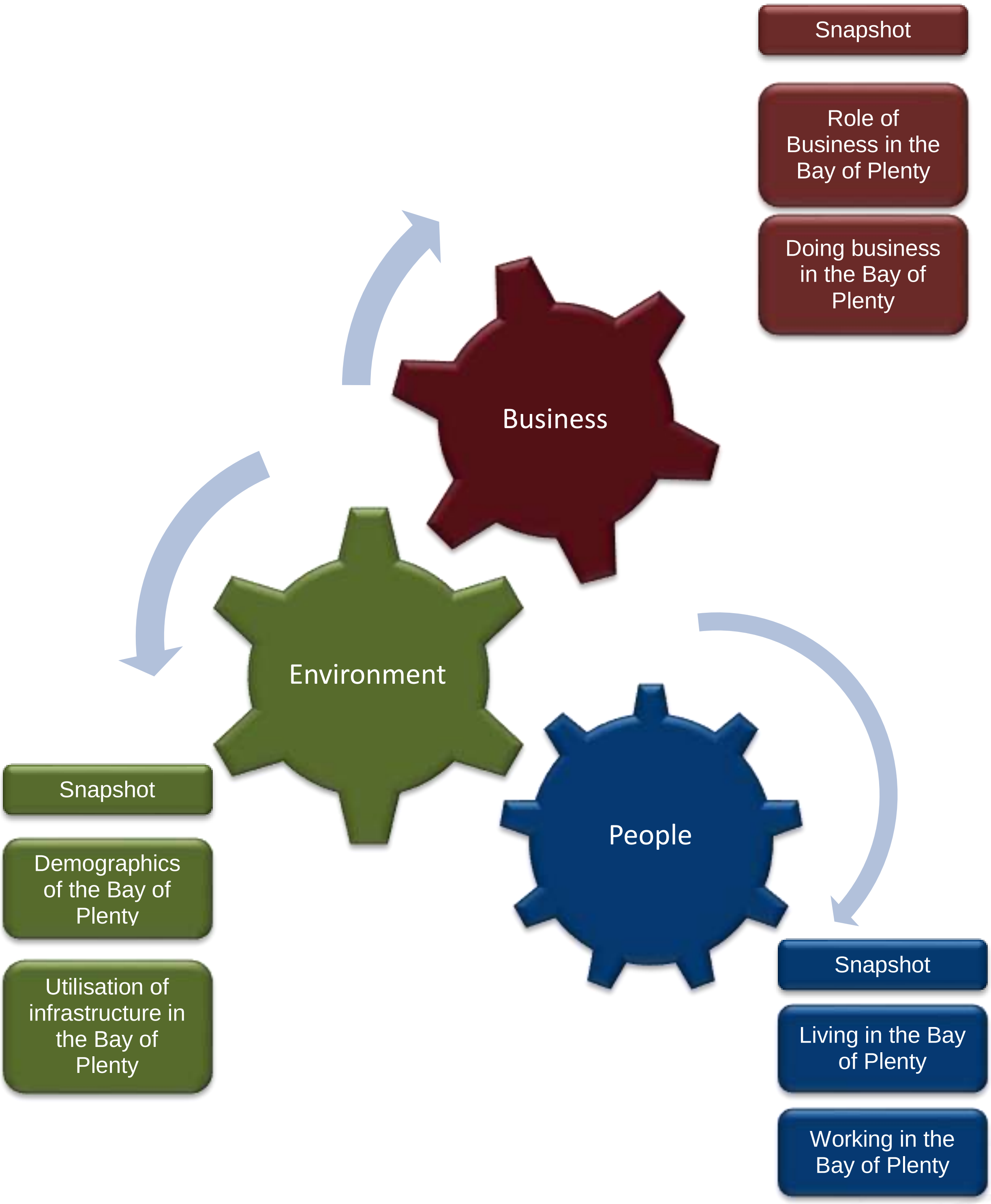
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People, business and environment

The purpose of this report is to present the state of the Bay of Plenty as part of a project aimed at providing baseline information to enable the setting of outcomes to guide development of a spatial plan for the Bay of Plenty.

An important goal of the spatial plan is to ensure investment facilitates growth that is successful, having regard not only of traditional economic measures, but of other factors of equal importance to communities. The triple bottom line accounting framework has been widely accepted as a good tool to measure strategy success as it goes beyond the traditional measures of profits, return on investment, and shareholder value to include environmental and social dimensions.

For the purpose of this report we have identified three interrelated (triple bottom line) key areas for measuring economic growth. The first is people, secondly the natural and infrastructure environment (planet) and lastly the business environment (profit).

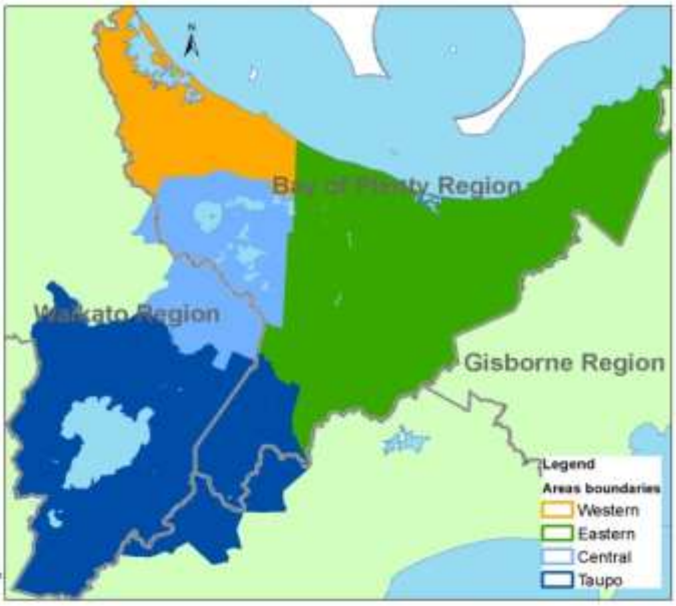
Access to data

Various data sources in this report is based on the 2006 Census and BERL recommends that this report is updated report in April 2014 with the 2013 Census data.

Geographic coverage

For this report, we focus on the following four areas, which broadly correspond to coverage of the Bay of Plenty Regional Council. These cover the territorial authorities of:

- Western area (2,290 km^2, 12 percent):
    - Tauranga City
    - Western Bay of Plenty District
- Central area (2,610 km^2, 13 percent):
    - Rotorua District
- Eastern area (7,570 km^2, 39 percent):
    - Whakatane District
    - Kawerau District
    - Opotiki District
- Taupo District (6,960 km^2, 36 percent)



Local Government in economic development

A recent report by BERL for LGNZ suggested that the nature of local government activity meant that everything it does has an impact on regional economic growth – positive or negative.[1]

The contribution of local government goes beyond its expenditure and employment out to the economic activity that is enabled as a result of the local government spend.

Further, industry and regional development activity is generally acknowledged as local government's contribution to economic development. However, this generally accounts for less than two percent of local government spend in New Zealand.

The report showed that all local government activity can be categorised into one of six areas:

- Leadership and planning
- Infrastructure
- Regulation
- Services
- Industry and regional development
- Social services.

The LGNZ work showed that complex relationships exist between the activities of local authorities and their propensity to deliver growth. By applying an economic growth framework to activity and understanding how that contributes to economic growth directly but also in relation to other activity areas, a local authority is better able to ensure that its activities maximise economic growth.

Local government needs to focus on population growth and jobs. Productivity and value-add are secondary issues (and it has been found, are often pursued to achieve the key outcomes of population and jobs).

In the Bay of Plenty, the approach taken in Bay of Connections is to engage with industry sectors to address constraints and explore opportunities to enhance business activity in that sector.

The Bay of Connections strategy identifies 13 main sectors and requires each to develop its strategy within the Bay of Connections Framework.

For a sector to be part of the Bay of Connections Strategy it needs to:

- Be based on a regional capability or comparative advantage
- Be aligned with nationally competitive sectors
- Have strong sector buy-in and leadership capability and commitment
- Have potential for transformational growth and employment opportunity.

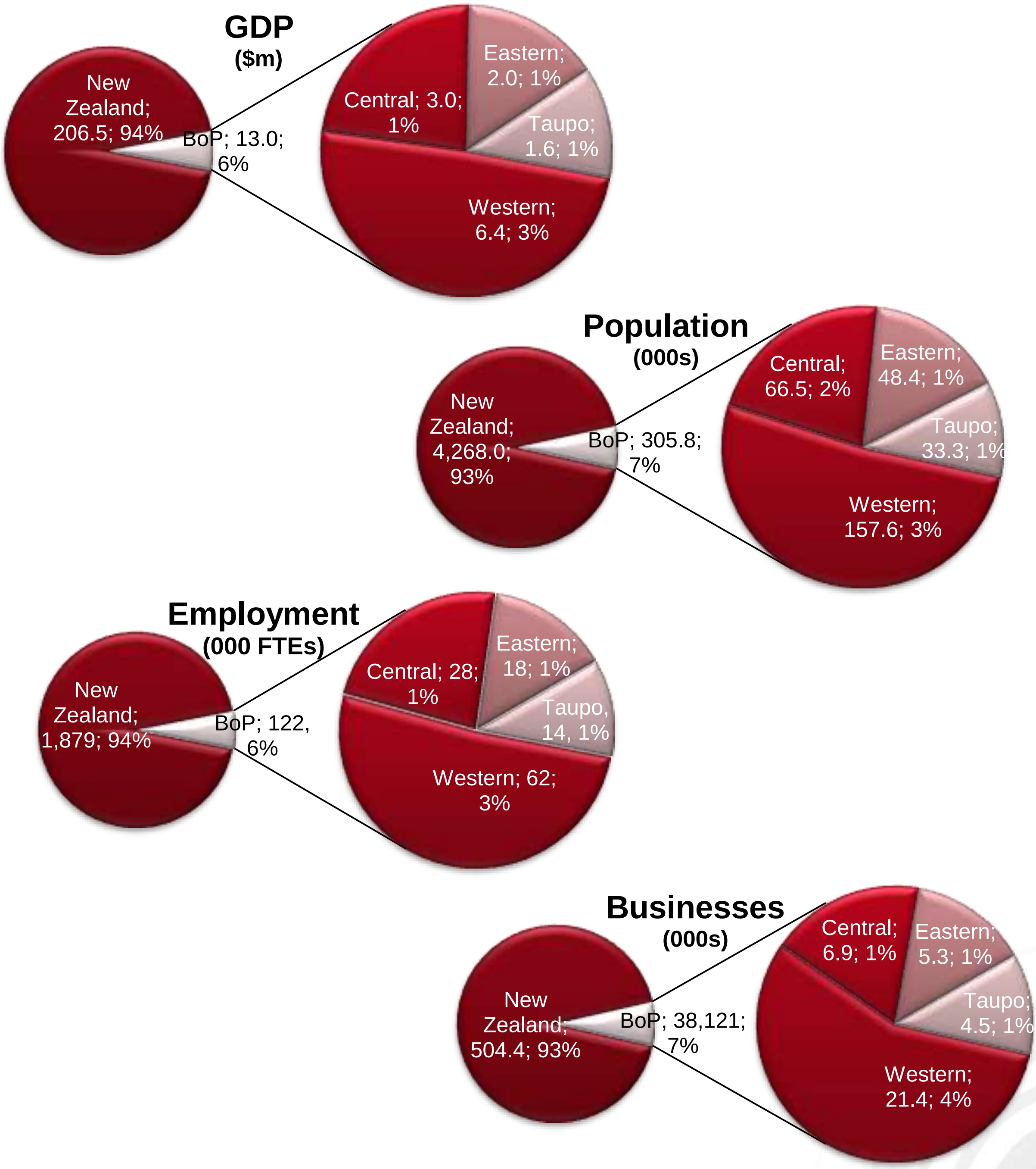
The sector-based Bay of Connections Strategy has a potentially significant impact on regional economic growth by creating job opportunities and increasing sector contributions to the region's GDP. However, the strategy remains very much focussed on Industry growth and less-so on factors outside each industries control that may be important constraints to progress. For example, dispersed population, ageing, lack of quality tertiary facilities may all be regional issues but do not fall within the sphere of control any particular industry. The Invest Bay of Plenty spatial plan will consider these broader matters within a triple-bottom line framework.

[1] BERL (2011). BERL Local Government Economic Indicators Framework. Report prepared for LGNZ.

Bay of Plenty contribution to New Zealand economy

The Bay of Plenty has a strong economy with a rich resource base, including fertile land, supporting flourishing agriculture and horticulture sectors, energy and aquaculture resources, and a growing population. Over the past decade its economy grew more quickly than the national average, with GDP growth of 2.5 percent per annum, and almost a quarter of its employment was in export industries.

In 2012, the Bay of Plenty region had an estimated population of 305,800, accounting for six percent of New Zealand's population. The Bay of Plenty region generates about $13.0 billion in GDP, six percent of New Zealand's total GDP. With about 122,000 full time equivalent workers (FTEs), it accounts for six percent of New Zealand's employment. There are 38,100 businesses in the Bay of Plenty region, accounting for seven percent of all businesses in New Zealand.



source: BERL Regional Database, 2012

1. People

1.1 Living in the Bay of Plenty

Around one in fourteen New Zealanders live in the Bay of Plenty, and this fraction has been growing. The region's population grew from 278,200 in 2002 to 305,800 in 2012 (+27,600), adding around 2,500-3,000 people a year.

- Tauranga, the region's largest urban centre, had a population of about 112,900 in 2012, or just over two fifths of the population of the region.
- The other important urban centres are Rotorua (66,500), accounting for around one quarter (24 percent) of the region's population, and to a lesser extent Whakatane (with around 18,000 people in its urban area and a further 15,000 in the remainder of its District).
- Kawerau and Opotiki, the other main settlements, each comprise around 3 percent of the region's population.
- The Taupo District had 33,300 residents in 2012.

Figure 1 Population size and age profile by area, 2012, Bay of Plenty

The Figure clearly indicates the concentration of the population in the western part of the region.

1.1.1 Age profile of the region

Compared to the country as a whole, the region has a high proportion of residents aged 65 or over (12% versus 15%) and a relatively low proportion in the 15-39 year age bracket (30% versus 35%). This may have implications for the development of regional economy with a potential shortage of young, skilled workers, and an increase in the dependent population.

> In contrast with the population concentration in the west, there is a greater proportion of young people in the east (one quarter) than in the west (one fifth).

Within the region, as at 2012, the average age of the population was slightly lower in the east (at 35 years old) than in west (38 years old). Tauranga has a particularly high proportion in over 65 age bracket (making up 17 per cent of the City's population). There are however strong contrasts between Tauranga and Rotorua, the second largest urban area in the region which has a relatively small share of the population over 65 and a relatively high share of younger residents.

Future implications

The patterns of population by age have implications for the potential for economic development, since the relatively high shares for the oldest population group represents a segment of the population with a limited degree of participation in the workforce. An older population will also demand higher health and other support services.

Also, the younger population is situated in the east of the region, with limited work opportunities. Providing access to work opportunities in the east as well as access to opportunities in the west will become increasingly important as the younger population transition into work. This will include providing access to transport to move between the east (living) and the west (working).

If opportunities are not created for young people they might transition out of the area in pursuit of education and job opportunities. In this case the population of the East might actually shrink. There is also anecdotal evidence that the younger population are not only moving out of the area, but are actually moving across the ditch, with their families following suit, meaning a hollowing out of the population with parents leaving the area as well..

1.1.2 Population growth trends

The Bay of Plenty's resident population grew by 0.9 percent per annum on average over the decade to 2012. This is a gain of about 27,600 people (a total change of about 10 percent over this time) or 2,500 to 3,000 people a year.

The growth rate was slightly slower than the national average of 1.2 percent per annum, but it was still it in the top half of the fastest growing regions.

Table 1 Population growth, by TA and area, Bay of Plenty (2002-2012)

Territoral Authority / *Area*	%pa for 2012 year	%pa avg for 2002 - 2012
Tauranga City	0.9	1.9
Western Bay of Plenty District	-0.9	1.4
Western area	*0.4*	*1.8*
Whakatane District	-0.3	0.1
Kawerau District	-0.6	-0.6
Opotiki District	-2.7	-0.8
Eastern area	*-0.8*	*-0.2*
Rotorua District	-0.3	0.2
Taupo District	0.6	0.5
BoP Region	**0.1**	**0.9**
New Zealand	**0.6**	**1.2**

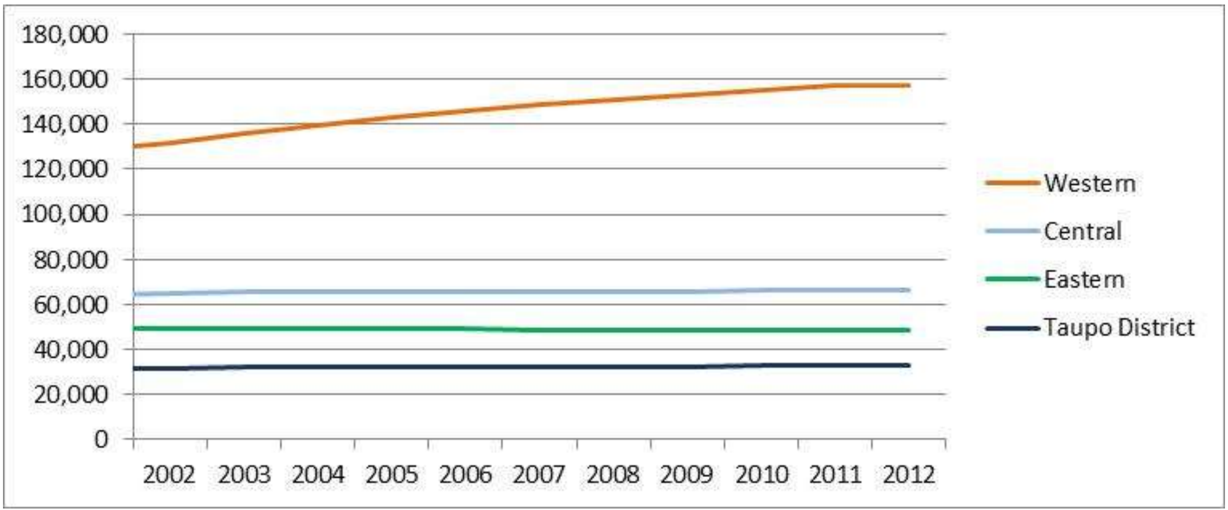
Source: BERL Regional Database, 2012

Population growth has been concentrated in Tauranga City, Western Bay of Plenty District and the Rotorua District. Population growth projections indicate continued growth in these areas from 2016 to 2031.

This average hides a period of relatively rapid growth up to 2006, followed by a slowdown. In the decade to 2006, the region's population expanded by 13.5 percent (an annual average of 1.3 percent). Over that time, it grew faster than New Zealand as a whole, which increased by just over 11 percent. The region's population growth rate over the past five years has moderated, growing by 3.4 percent between 2007 and 2012 (an annual average of 0.7 percent).

The population growth was not evenly spread across the region. Figure 2 below shows the recent population growth trends in four areas of the Bay of Plenty.

Figure 2 Population growth by area, 2002 – 2012, Bay of Plenty

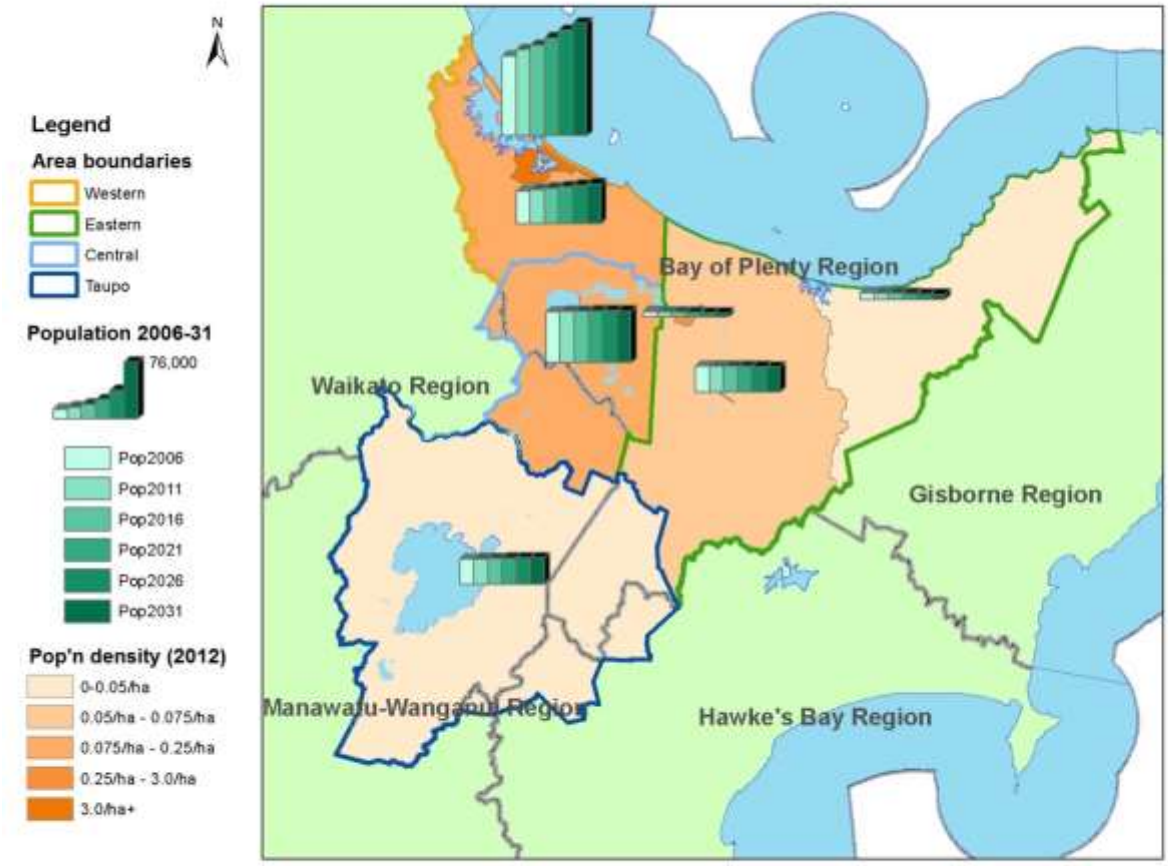


Population growth was most rapid in the west – Tauranga and Western Bay of Plenty District. The Western area increased its population by around 1.2 percent p.a. between 2007 and 2012.[2]

In Rotorua on the other hand population has remained virtually static, adding just under 700 people (0.2 percent per annum). In the Eastern area, the population declined. In population terms therefore there is a strong contrast between the large and rapidly growing areas to the west and the smaller areas to the east with little or no growth.

Tauranga, Western Bay of Plenty and the Rotorua Districts have the highest population densities in the region. Density is important from a microeconomic perspective; one of the key benefits of density is that it lowers the costs of providing infrastructure but also the cost of generating new ideas and exchanging information. In particular, the close physical proximity of firms and people in dense urban areas facilitates the flow of knowledge by increasing the amount of interaction and face-to-face contact that people experience. Such contact has been shown to enhance productivity when information is imperfect, rapidly changing, or not easily codified, key features of many of the most valuable economic activities today. These are also the areas that are projected to have the fastest growing population in the region over the next 20 years, as shown in the Figure below.

Figure 3 Population growth projections by territorial authority, 2016 – 2031, Bay of Plenty



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[2] Population growth in the Western area was underpinned by 0.9% p.a. in the Western Bay of Plenty District and 1.3% p.a. in Tauranga City over the 2007-2012 period, on average.

The region's projected population growth rate out to 2031 is 0.7 percent per annum. This is the third fastest growth rate in the country, continuing the trend of a relatively fast growing region. BERL research in 2010 on the Eastern area of the Bay of Plenty found that the *biggest* source of population growth was internal migration, i.e. from other areas of New Zealand, and the *fastest growing* source was overseas migrants.

Most new migrants to New Zealand, however, settle in the 'gateway' cities of Auckland and Christchurch in their first five years. As migrants become more established their settlement patterns tend to mirror those of the New Zealand born.[3] Department of Labour research shows immigrants are attracted to New Zealand by its lifestyle, environment and employment opportunities. While these factors are important to migrants, and the lifestyle factor is a relative strength of the Bay of Plenty, there is a relatively slow percolation of migrants to the Bay.

Future implications

Whakatane, Kawerau and Opotiki Districts (eastern areas) as well as Taupo have lower population and employment densities. Low density areas tend to be associated with lower productivity and lower growth. This is reinforced by Statistics New Zealand's population projections, which indicate that the population in the eastern areas is likely to decline from 2016 out to 2031, and the central and southern areas are likely to remain relatively static.

This projection is by no means set in stone. It poses challenges for the region and its constituent territorial authorities. A sound understanding of the region's and area's key strengths and opportunities will help the people and businesses to rise to this challenge.

[3] BERL (2007). Fiscal Impacts of Immigration 2005/06. Report prepared by Dr Adrian Slack, Jiani Wu and Dr Ganesh Nana for the Department of Labour.

1.1.3 Ageing population

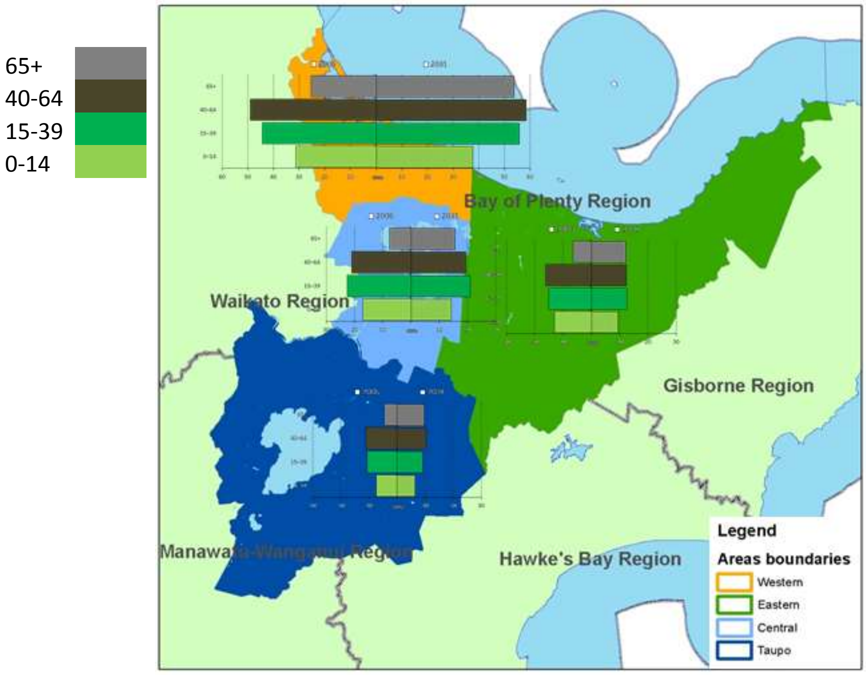
Population projections show that the Bay of Plenty will be faced with a rapidly increasing, and proportionally older population over the next 30 years.

Future implications

The needs of the population will change as it ages over the coming decades. Utilisation patterns and preferences will evolve accordingly and there will be an increased expectation that local government will accommodate those changing needs. For example, ageing may create additional need for transport to and from health providers – especially in smaller communities where facilities are currently lacking. Failure to respond to these changes will have negative consequences for the region – including labour and skills shortages, falling productivity and disparities in health and wealth among the population.

There are implications for all areas of public policy, and for the private sector. A response to the ageing population has to be co-ordinated and must broaden its focus beyond the more obvious economic implications – encompassing new approaches to health, housing and transport. This has planning implications for the provision of transport infrastructure and services (BOPRC, 2010).

Figure 4 Age pyramids ('000s of people), by area, Bay of Plenty - 2006 (left) and 2031 (right)



The age pyramids indicate a growing number and share of people in older age groups across all areas in the Bay of Plenty. The fraction of people aged 65 plus is projected to rise from between one in six to one in eight now to around one in four by 2031- about double the 2006 level.

1.1.4 Population movement

Understanding these population movements will assist the Bay of Plenty's councils to design policy and to work towards achieving spatial population targets. All indications are that the population will be growing, the workforce will become more diverse and the supply and demand for goods and services will change accordingly to support the needs of the population.

Between the 2001 and 2006 Census, Bay of Plenty experienced a net gain of just over 4,500 people from other regions. That is a relatively high number compared with other parts of New Zealand. On average, a region gains and loses around 8% of the regional population between Censuses – this might be referred to as 'churn'. According to the 2006 Census, the number of people moving to the Bay of Plenty was equivalent to 11 percent of the population. The number leaving the region was equivalent to approximately 9 percent of the population. This makes the region's population slightly more mobile than the national average.

Population movements within the Bay of Plenty are also important. A study by BERL for TOI - EDA in 2010 on demographics in the Eastern Bay showed that there was substantial churn in the area's population. The greatest sources of inward and outward migration to the Eastern Bay area were other areas in the Bay of Plenty. After the Bay of Plenty, the main places that people moved to were Auckland and Waikato, indicating the importance of the links with these areas.

The study also found that there was a growing trend for employed people to move into the Eastern Bay area and a decline in employed people moving out of this area. There is also anecdotal evidence that people are moving out of the area and the country across the ditch. This trend is however tapering off as shown in the latest *Migration Trends Key Indicators Report* by MBIE. The figures shows that permanent and long-term migration to New Zealand had a net gain of 7,900 in the 12 months from 1 July 2012-30 June 2013 compared with a net loss of 3,200 in the previous year. The net gain was mainly due to fewer New Zealand citizens leaving for Australia.

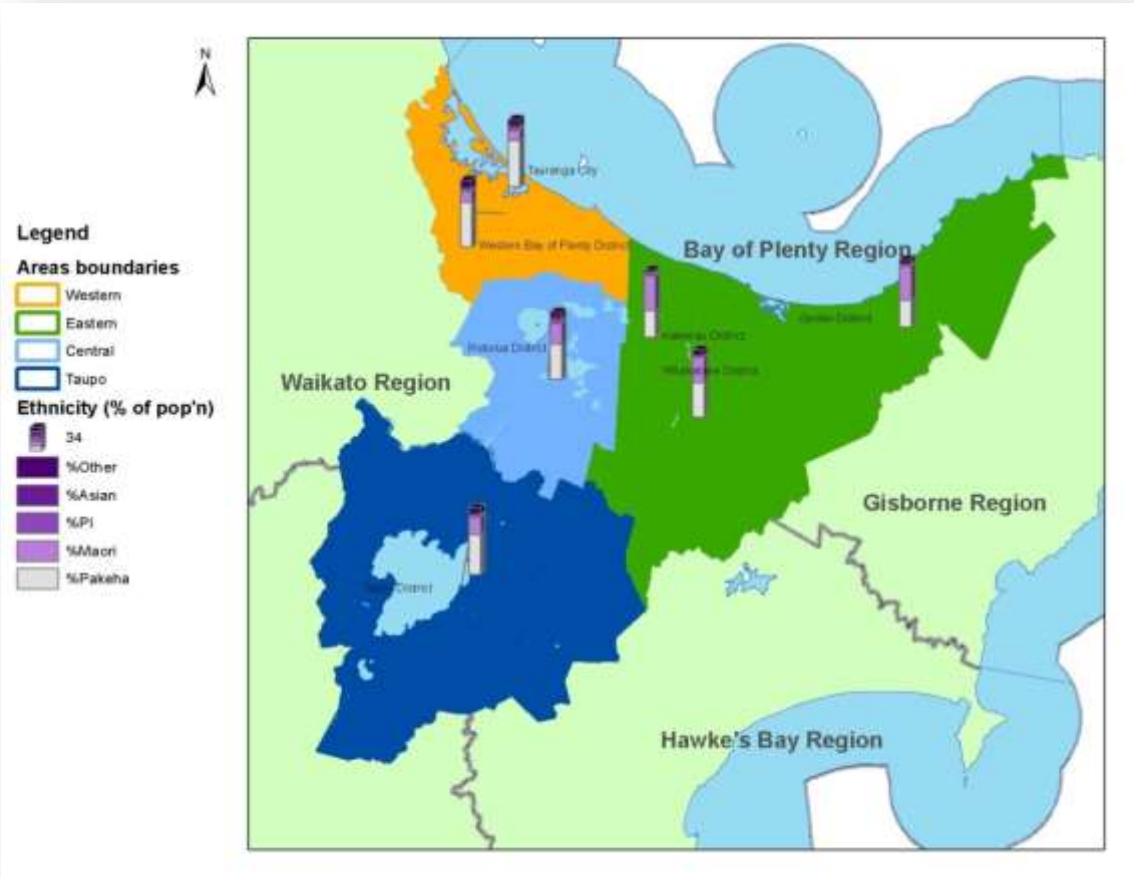
Employment will continue to be a key factor in attracting people to move to the Bay of Plenty.

1.1.5 Ethnicity

Bay of Plenty, particularly the east of the region, has a relatively large Maori population.

In terms of absolute numbers, most Maori live in Rotorua District. The share of Maori in the population is greatest in Kawerau District, with Opotiki District not far behind. In Western Bay of Plenty District and Tauranga City, the relative proportion of the population that identifies itself as Maori is relatively small. The share of the population that identifies as European or 'New Zealander' is subsequently larger. The populations of Asian and Pacific People in the region were relatively small.

Figure 5 Ethnicity by territorial authority, 2006, Bay of Plenty (% of TA population)



Future implications

Māori are a young demographic and are therefore important to the Bay of Plenty future labour market participation and productivity. It is estimated that approximately 34 percent of the Māori population are less than 15 years of age in comparison to 23 percent for the wider population. This means a significant proportion of the working age population for the next generation will be Māori. Careful consideration will have to be given to the way tertiary training services are delivered, where they are delivered and links to job opportunities. For example, in the east the young demographic is a large number. Yet facilities will probably be in the West where the young demographic is a percentage of a smaller (relative) number.

1.1.6 How well is the Bay of Plenty economy supporting its population?

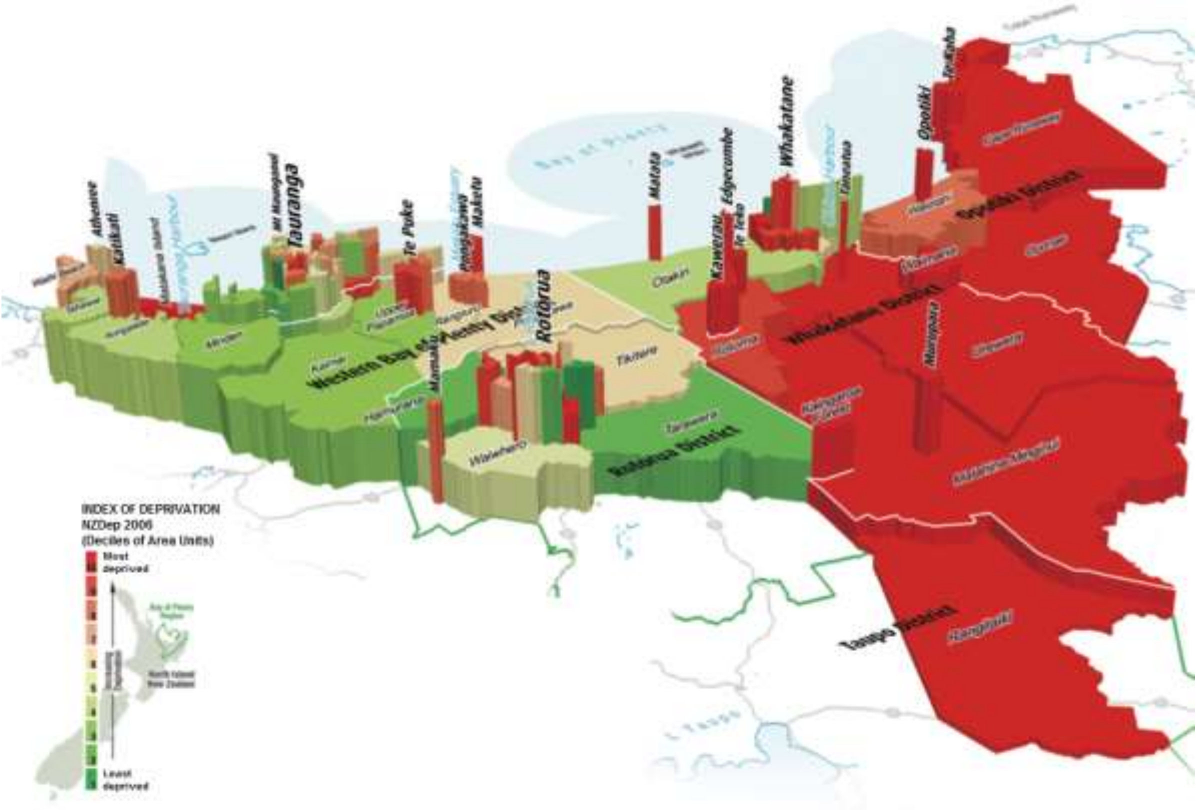
The Bay of Plenty has a higher than average level of deprivation. There is an obvious west (least deprived) to east (more deprived) pattern. But there are also pockets of deprivation in urban areas such as Tauranga City and Rotorua City

The New Zealand Deprivation Index (NZDep) is a measure of living standards in an area. It uses information from the 2006 census across eight dimensions of welfare, including income, qualifications, employment, home ownership, and social indicators such as access to services and social support. Using a 10-point scale, the Index divides New Zealand into tenths, where a score of 10 indicates that an area is in the most deprived 10 percent of areas in New Zealand.

The NZDep is a good indicator of how well the Bay of Plenty economy is supporting its population. If the Bay of Plenty population had an equal distribution of deprivation, 50% of the people would be in deciles 1-5 (less deprived) and 50% in deciles 6-10 (more deprived). The 2006 Census indicated that just over two thirds (68.4%) of people were in deciles 6-10. That is, a disproportionate number of people in the Bay of Plenty were living in relatively deprived conditions, compared to the national average. Of these, 45% were in deciles 6 or 7 (moderate deprivation) and just under one quarter were in deciles 8, 9 or 10 (high deprivation). There has however been an improvement in the percentage of population in the region in the most deprived decile in the Bay of Plenty, declining from 17.2 percent to 13.2 percent in 2006.

The figure below shows the number of people affected in a given area (shown by the height of the bars). While the low population density in the eastern areas means that high deprivation affects relatively few people, there are dense pockets of high deprivation, such as in Murapara or Kawerau.

Figure 6 Deprivation index and population size by census area unit, 2006, Bay of Plenty



Source: Bay of Plenty Regional Council

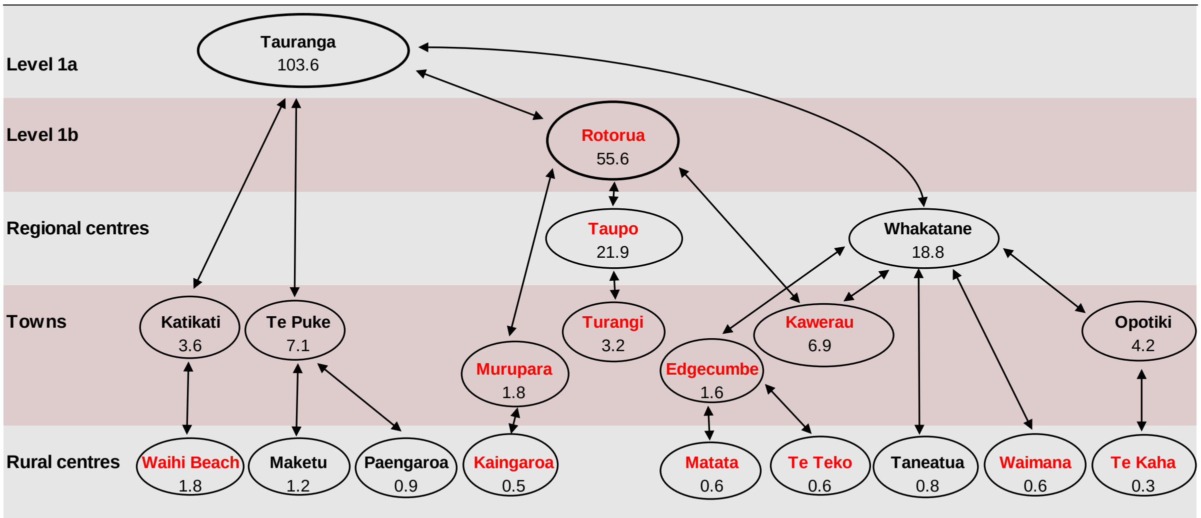
As for the deprivation patterns in the Bay of Plenty, there is a west-east pattern of deprivation with the Maori population over-represented in the high deciles and under-represented in the least deprived deciles. There is, however, significant regional variation in the extent of this over and under representation. In the most deprived area in the east, 41 percent of people were of Māori ethnicity, compared to the regional average of 24 percent.

1.1.7 Links between settlements

A settlement hierarchy is a way of representing the role that various settlements play in a region or country. Higher positions in the hierarchy reflect larger populations, greater availability of services, and its wider connections or sphere of influence. The arrows indicate the primary connections between settlements in terms of the reliance between settlements. For example. higher level settlements supply higher level services to lower level settlements; equivalently, the lower level settlements affect higher level ones by creating demand for services.

The following figure illustrates the settlement hierarchy in the Bay of Plenty (BERL, 2010). The figures indicate the usually resident population count (000s) based on the 2006 Census.[4]

Figure 7 Bay of Plenty Region Settlement Hierarchy, 2006



Note: Settlements in red had a decline in population between 2001 and 2006 Censuses. *Source: Population from Census 2006*

Tauranga is the main centre for the region, with Rotorua a secondary centre and Whakatane a regional centre. Tauranga is the alpha city in the region and has direct links to four other settlements including two of the three regional centres (Rotorua and Whakatane).

The geography of the region suggests that smaller centres also play key roles. For example, Whakatane also has five links and towns such as Te Puke support two smaller rural centres (Maketu and Paengaroa).

In the Bay of Plenty, the education allocation largely follows the hierarchy, with rural centres all having one or two primary schools, the towns have a number of primary schools and at least one secondary school to serve their own and the hinterland population. Rotorua and Whakatane have a number of secondary schools as well as a tertiary education or training institution. Tauranga has a large secondary school population, presumably attracting students from the Western Bay of Plenty, and also tertiary training.

[4] More up-to-date population estimates than 2006 are available, but do not provide detail at settlement level (rather than a territorial authority or regional level). The 2013 Census results (yet to be released at the time of writing) are likely to confirm the basic structure of the settlement hierarchy as illustrated, but may show different growth patterns.

At the higher level of health provision, New Zealand hospitals are classified progressively as sub-acute, secondary, and the tertiary. The hospitals in Bay of Plenty reflect their places on the settlement hierarchy with Tauranga, Rotorua and Whakatane having secondary hospitals, and Opotiki and Taupo, sub-acute ones.

Generally, the social service provision is consistent with effective access for people up and down the settlement hierarchy.

Provision of public transport is growing in the Bay of Plenty, and as populations grow and people move to settlements up the hierarchy for higher level services this increase in demand will hopefully drive the expansion of the public transport services.

Future implications

The settlement hierarchy also suggests the importance of the rising or falling fortunes of particular settlements for those that they have links with. For example, expansion in the rural centres in the east is likely to place a greater demand on Whakatane for increased higher level services than may currently be available. That is, more industry may create a demand for a wider variety of vocational training or adult education and at a higher level.

The other aspect is that in the settlement hierarchy, above Tauranga are Hamilton and Auckland. While Tauranga City is at the top of the Regional settlement hierarchy, it sits within a larger New Zealand - and Australasian - settlement hierarchy.

This shows through in health, education, research facilities and services like air transport. In terms of hospitals whereas Tauranga is a secondary hospital, Hamilton's is next level up at a tertiary (I), and Auckland's another level again at tertiary (II). To recognise the level and obtain optimum access to health services for all Bay of Plenty people, Tauranga would therefore logically look to have the best possible access to higher level services at the other two, rather than attempting to provide all levels of services itself.

Effective transport will be a significant enabler in the future to ensure that main centres can feed and vice versa into secondary and smaller centres within the region. Also, reliable and high speed communication (broadband) will enable the delivery of services in new innovative ways.

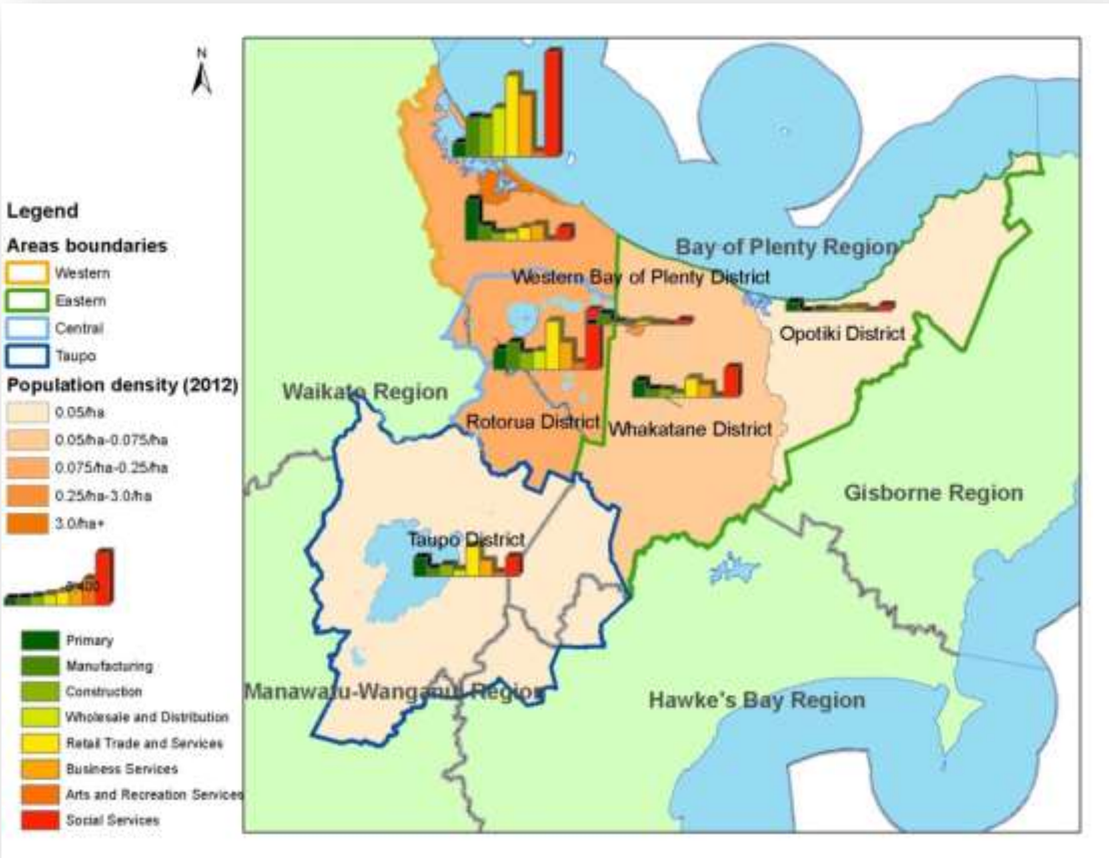
1.2 Working in the Bay of Plenty

Jobs provide people with the opportunity to earn income, gain skills and experience, and support people's desired lifestyle and add to the region's economy. Similarly, the level and type of employment growth has an important influence on reaching future targets.

We begin by showing where the jobs are and in what sectors[5]. At a high level, we can see that most of the jobs are also where most of the people are – as shown by the high population densities to the western and central areas.

This picture also shows that areas with higher population density not only tend to have more jobs but a greater proportion of those jobs tend to be in higher paying, service industries. The high level picture, though, does not capture some of the work-live decisions that people make. For example, a substantial proportion of Tauranga City's labour force lives in the Western Bay of Plenty. Similarly, many people that work in Kawerau live in Whakatane.

These work-live patterns have implications for where job growth and population growth occur, and the infrastructure, services and facilities required to support such growth, such as roading infrastructure, public transport services, and community facilities.



[5] Statistics New Zealand provides employment statistics for 506 industries. We group these industries into eight sectors for reporting purposes: Primary, Manufacturing, Construction, Wholesale and Distribution, Retail Trade and Services, Business Services, Arts and Recreation Services, and Social Services.

The idea of a settlement hierarchy (see page 1) can also be used to examine the interconnections between areas and the scale of these interconnections. For example, examining employment by sector can show where particular activities are located and the areas that serve – or are served by others – thus highlighting the flows and dynamics between areas.

All three main centres – Tauranga, Rotorua and Whakatane – have over one quarter of the employment for that particular area in the services sector, a figure that is above the average for the country as a whole (23.8 percent). This relatively high proportion of services in these centres reflects the nature of the settlement hierarchy – that is these are primary and regional centres. There is a definite clustering of services in the main centres, but also, there is more service sectors jobs in the main centres than the average for the country. This is balanced by a low share in the smaller communities indicating their dependence on the larger settlements for these types of services.

The high-level services function of Tauranga City to the region means that it also has a disproportionately large share of employment in social services. Around one quarter of the City's employment is in the social services sector, and from a regional perspective, almost one half of this sector's employment for the region is in Tauranga. This mainly relates to employment in public administration, primary and secondary education, hospitals/medical and other health care services, and residential care and social assistance services.

Rotorua at the next level has around 28% and the Whakatane regional centre has 13.5% of the region's people employed in social services. Focusing on the public administration component of the social services sector, we note that Whakatane has almost 18% of the region's employment in this industry. This reflects that Environment Bay of Plenty - a major local government entity serving the entire region – had much of its staff located there. It also has a base hospital serving the East Cape with about 100 staff.

Employment in education across the country is generally 6% to 7%, with main cities having about 8%. Areas with shares above 9% generally have strong tertiary institutions of some type, such as Dunedin, Porirua (with a polytech and Wananga), and Selwyn District with Lincoln University. The pattern in Bay of Plenty has an average 7.6% in Tauranga, and a slightly higher 9% in Rotorua. There is a high share due to strong educational training institutions in Opotiki (12%) and Whakatane (12%) and a relatively low share in the more rapidly growing areas to the west of the region. The establishment of a satellite university in Tauranga is consistent with the City consolidating its role as the region's main centre. This may contribute to retaining young people living in the region who would otherwise have travelled away for higher academic studies. The increased access to local academic tertiary study in Tauranga may change the study, living and transport patterns of young people that would have remained within the region and might otherwise have studied in Rotorua, Opotiki or Whakatane for example.

Future implications

The spatial pattern of where people and businesses locate affects the opportunities of residents to secure employment and to access services. For example, the current spatial supply of social services limits the accessibility of higher level health and education services for people in rural areas and the smaller settlements, such as Murapara. Combined with lower average income levels and falling populations in these areas, this affects the standard of living of residents in lower level settlements. This feature of the region's economic geography has implications for the need for transport, and the role of passenger transport in serving residents from rural areas or small centres accessing training institutions and facilities in the main settlements.

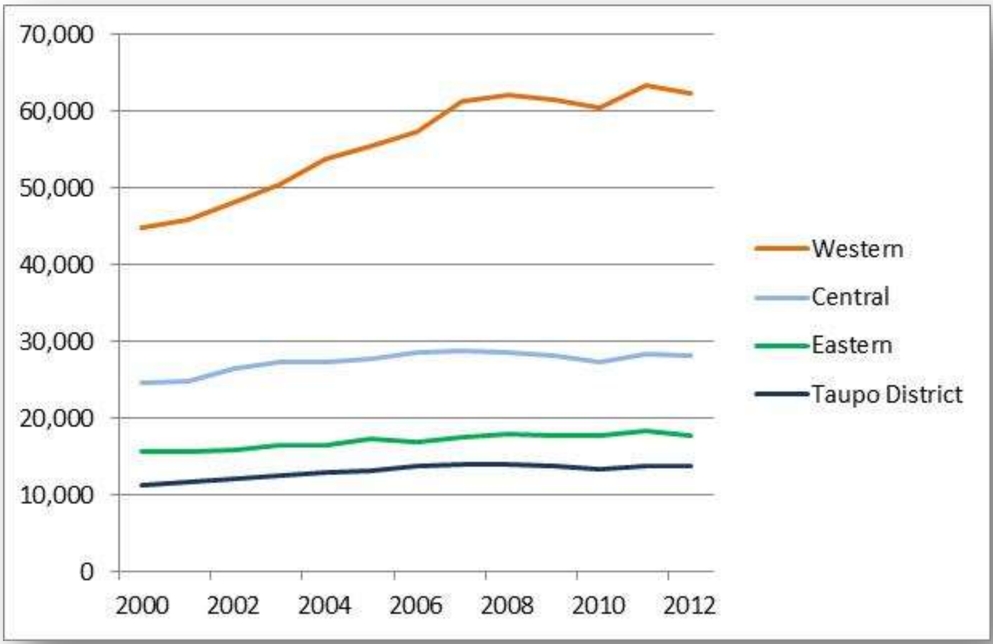
1.2.1 Employment growth

The latest picture: According to the March 2013 quarter Household Labour Force Survey employment growth over 2012 was not solely confined to Canterbury. Wellington, Waikato and Auckland increased employment by more than 5 percent each in the last quarter. The picture for most other regions was positive but flatter. The Bay of Plenty and Northland stood out as low performers, with employment contracting over the March quarter. Most recently, the closure of Tachikawa Forest Products will lead to the loss of 120 jobs in Rotorua.

The baseline and trends: Tauranga and Rotorua represent about 70 per cent of total employment in the region (or 63 percent including Taupo District). Reflecting the patterns of population growth, employment in Tauranga has been growing rapidly. Employment increased by about 32 per cent in the decade to 2012 (an annual average of 2.8 percent).

> The strong growth in employment in Tauranga represents about two thirds (67 percent of total employment growth for the whole region between 2002 and 2012.

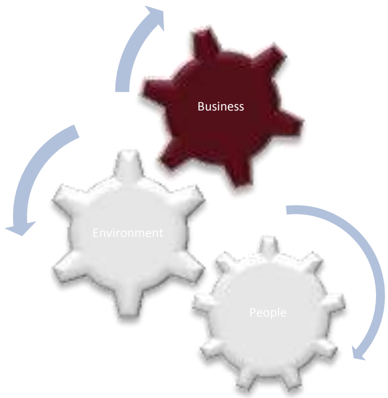
Figure 8 Employment growth by area, 2002 - 2012



Employment also grew in the other areas, but was much more modest, except in Kawerau where employment fell between 2002 and 2012 (by -2 percent per annum on average). Employment in Rotorua grew by 0.5 percent per annum, Whakatane by 1.9 percent and Opotiki by 1.8 percent, and Taupo by 1.2 percent.

BERL research on the Māori economy in the Bay of Plenty indicated that Māori made up 23 percent of total employment in the Bay of Connections in 2010, with 27,000 Māori employed in various industries. The top five industries that employed Māori were manufacturing, retail trade, education, construction, and health & community services. The income information in our research also suggests that within these sectors Māori were in positions with lower earning potential and had access to relatively fewer skilled occupation opportunities.

The implications of this scenario are twofold. Firstly, with future opportunities somewhat limited, communities in the East with comparatively more Māori may need to look to alternative industries and new opportunities to substantially improve income (and thus deprivation) stats in that area. Secondly, with these same industries being relatively "low density", the opportunities for substantial employment gains in these same industries may be limited – particularly given the likely growth in service industries in the future.



2. Business

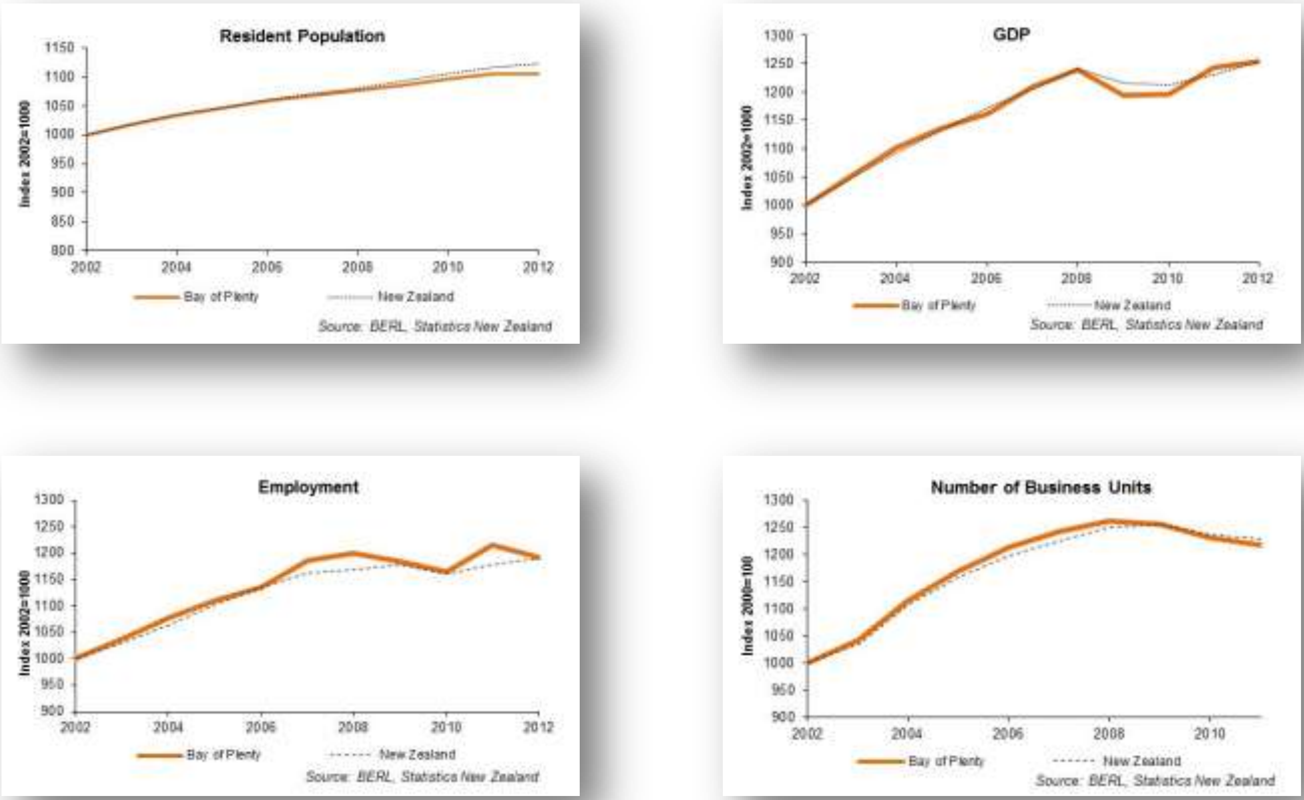
In general terms, the Bay of Plenty's economic performance has been relatively consistent with the national outcomes over the past decade.

As did much of the country, the Bay of Plenty's economy shrank during the global financial crisis (2008-2010). In particular the Bay of Plenty was struck hard by falling exports which make up a big part of its economy. The Bay of Plenty's GDP has now recovered to a growth rate similar to that of New Zealand as a whole.

Employment and business numbers grew slightly ahead of the national rates over the decade.

The graphs below show the key indicators of population, GDP, employment and business growth between 2002 and 2012. The figures use index numbers to highlight the growth in the Bay of Plenty relative to New Zealand. The index starts at a base level of 1000 in the year 2002; higher index numbers indicate greater growth.

Figure 9 Population, GDP, Employment and Businesses Growth, 2002 - 2012



While the region's economy has performed at a rate equal to or above the national average in the recent past, this does not guarantee that it will continue to do so into the future. A sound growth strategy and robust analysis will contribute to high quality decisions that help ensure a growth path that is beyond what would be expected under 'business as usual'.

Below we provide some background to what ‘business as usual’ growth may look like. We outline the role that business plays across the Bay of Plenty, where it is located, what is produced and the level of employment, and what value is added in the process.

2.1 Role of business

Business has an important role in generating employment and income, and supporting growth. In 2012, approximately 122,000 full-time equivalent employees working in 38,000 businesses generated $12.99 billion of value-added output (just over 6 percent of the nation’s GDP).

The majority of the region’s employment, value-added output and businesses are located in the Western area. The Central area is home to around one quarter of the region’s employment and just under one fifth of its businesses. The Eastern area and Taupo District contain a smaller number of workers and businesses, despite being two of the wider region’s largest areas, covering 39 percent and 36 percent of the region’s land area, respectively.

Table 2 Employment (FTEs), GDP and Businesses, by area, Bay of Plenty, 2012

Area (2012)	**FTEs**	***% of Region***	**GDP (2012$m)**	***% of Region***	**Business units**	***% of Region***
Western	62,320	51%	6,445	50%	21,361	56%
Central	28,040	23%	3,031	23%	6,929	18%
Eastern	17,630	14%	1,956	15%	5,325	14%
Taupo District	13,780	11%	1,557	12%	4,506	12%
BoP Region*	121,770	**100%**	12,990	**100%**	38,121	**100%**

*Bay of Plenty Region including Taupo District *Source: BERL Regional Database, 2012*

The spatial pattern of people and resources is mirrored in the mix of industry across the region. The more populous settlements, most productive/high value land (see section 3), and activity with a higher service and value-added manufacturing component is located in the west. Greater primary resource and resource extraction activity is based in the south and east.

2.1.1 Recent economic performance and longer term trends

Before drilling in to the region’s and areas’ key sectors where it has a comparative advantage, we present some key economic indicators for the latest year (2012) and the longer term (the trend to 2012). These provide insight into recent and trend growth in the Bay, which will anchor a ‘business as usual’ growth path along with wider economic factors.

The region’s top sectors in 2012, by value added output, were:

- Social Services ($1.77bn),
- Manufacturing ($1.77bn)
- Business Services ($1.72bn).

The Primary sector ($1.33bn), Wholesale and Distribution sector ($1.32bn) and Retail and Trade Services sector ($1.13bn) also generated more than $1 billion of output each in 2012.[6] Table 3 shows the 2012 value added output by sector for each area in the Bay of Plenty.

[6] The Data Appendix (page 26) also reports employment, productivity, business units, and business size by area for 2012.

Table 3 Value added output, by area, Bay of Plenty (2012)

Sector	Value Added or GDP (2012$m)					
	Western	Central	Eastern	Taupo District	BoP Region	New Zealand
Primary	551	396	382	362	1,328	15,393
Manufacturing	909	507	349	136	1,765	28,902
Construction	335	124	83	82	542	9,594
Wholesale and Distribution	923	308	93	105	1,324	24,471
Retail Trade and Services	650	303	175	186	1,128	17,999
Business Services	1,060	413	252	292	1,724	51,039
Arts and Recreation Services	55	67	10	32	132	2,146
Social Services	970	494	307	152	1,771	30,098
Owner-Occupied Dwellings (O.O.D)	*994*	*419*	*305*	*210*	*1,718*	*26,905*
Total	**5,895**	**2,636**	**1,575**	**1,195**	**10,105**	**191,153**

Source: BERL Regional Database, 2012

The key economic indicators (Table 4) show that the Bay of Plenty has broadly been tracking in line with the New Zealand economy. The slightly lower population growth, however, has contributed to rising GDP per capita (on average). This result highlights the important role of growth in high productivity industries: sustaining population growth *and* rising incomes per person requires increased employment opportunities in high value industries.

Table 4 Trend key performance indicators, by area, Bay of Plenty (2002-2012)

Key Performance Indicators	%pa for 2002 - 2012					
	Western	Central	Eastern	Taupo District	**BoP Region**	**New Zealand**
Resident population growth	1.8	0.2	-0.2	0.5	**0.9**	**1.2**
GDP growth	3.0	1.1	1.8	2.2	**2.3**	**2.3**
GDP per capita growth	1.2	0.9	2.0	1.7	**1.3**	**1.1**
Employment growth	2.6	0.5	1.1	1.2	**1.7**	**1.8**
Labour productivity growth	0.4	0.5	0.9	1.0	**0.6**	**0.5**
Business units growth	2.6	0.7	0.8	2.0	**1.9**	**2.1**
Business size growth	0.0	-0.2	0.3	-0.8	**-0.2**	**-0.3**

Source: BERL Regional Database, 2012

The latest economic key performance indicators, however, show that the number and size of businesses across the region has been shrinking (with the exception of business size growth in Taupo). Lower than trend business growth has seen a rise in unemployment, and slower growth in the region's GDP and GDP per capita. For example, 2012 saw employment fall by 1.8 percent (Table 5) compared to the region's trend growth of (positive) 1.7 percent per annum on average between 2002 and 2012 (Table 4). During the global financial crisis (2008-2010), the contractions were spread across most of the Bay of Plenty economy's eight sectors, with the exceptions being the primary sector and the social services sectors. The latest results reflect falls in the primary sector, retail trade sector, and an on-going decline in the construction sector. At its peak in 2007, the construction sector had just over 13,100 full-time equivalent employees, but it shrunk to just under 10,500 FTEs in 2012 (an annual decline of 4.4 percent).

Table 5 Latest key performance indicators, by area, Bay of Plenty (2012)

Key Performance Indicators	%pa for 2012 year					
	Western	Central	Eastern	Taupo District	**BoP Region**	**New Zealand**
Resident population growth	0.4	-0.3	-0.8	0.6	**0.1**	**0.6**
GDP growth	0.8	1.3	0.1	3.0	**1.1**	**1.9**
GDP per capita growth	0.5	1.6	0.8	2.4	**1.0**	**1.3**
Employment growth	-1.5	-1.4	-3.7	0.4	**-1.6**	**1.0**
Labour productivity growth	2.3	2.9	3.9	2.8	**2.8**	**1.0**
Business units growth	-1.4	-1.0	0.7	-1.2	**-1.0**	**-0.2**
Business size growth	-0.1	-0.5	-4.4	1.5	**-0.6**	**1.2**

Source: BERL Regional Database, 2012

The tables above indicate that productivity in the Bay of Plenty has generally been rising quicker than the national average rate. An exception is the Western area, which reflects that its population has grown relatively more quickly (1.8 percent versus 1.2 percent nationally) than its GDP (3.0 percent versus 2.3 percent nationally). In 2012 employment contracted more than the population grew, however this does not reflect a longer term trend.

Interpretation note: as a 'statistic', productivity growth can fall (*rise*) if the labour force/population grows more quickly (*slowly*) than GDP. This means that a falling population may seem to be good for productivity. However, it is best to interpret this indicator over a longer term. This allows for temporary dynamics – such as people moving to the region and taking time to integrate fully into the economy or newly trained workers with low (but rising) productivity entering the labour force – to wash out. So while declines in the population may temporarily lift the productivity indicator, it is likely that a shrinking population will ultimately lower the economy's productive capacity and cause productivity to fall as the labour force has a dwindling amount of people, skills and replenishment.

Population growth is an important ingredient for a region's long term vitality, and is a signal that people see the region as a desirable place to live and work. Population growth can increase the diversity and skill base of the labour force, as well as 'greening' the region's demographics.

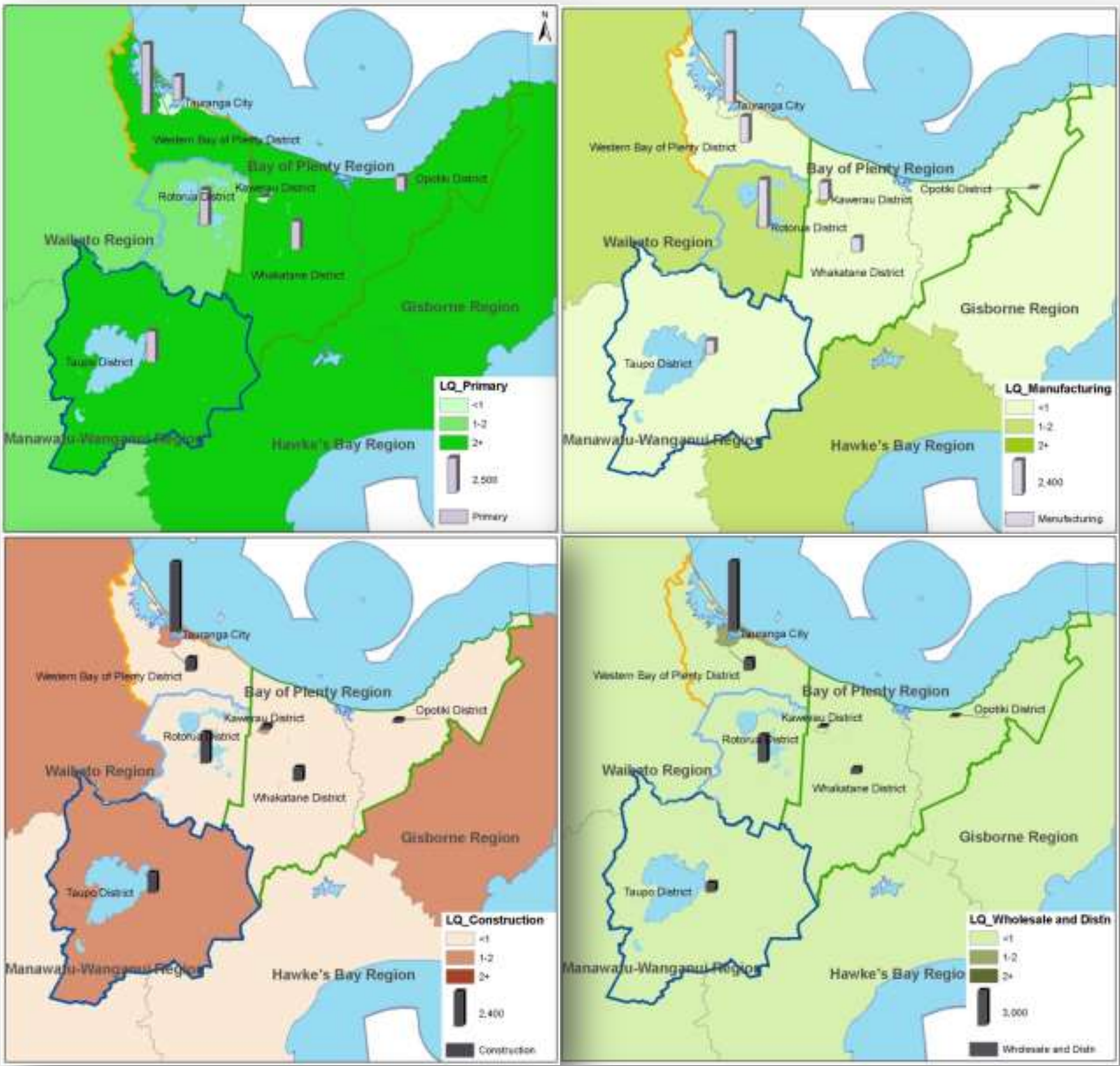
2.1.2 Current economic strengths

Below we examine which sectors the Bay of Plenty, and its areas, have relative strengths in currently. To do this we look at the local labour market's industry structure compared to New Zealand as a whole.

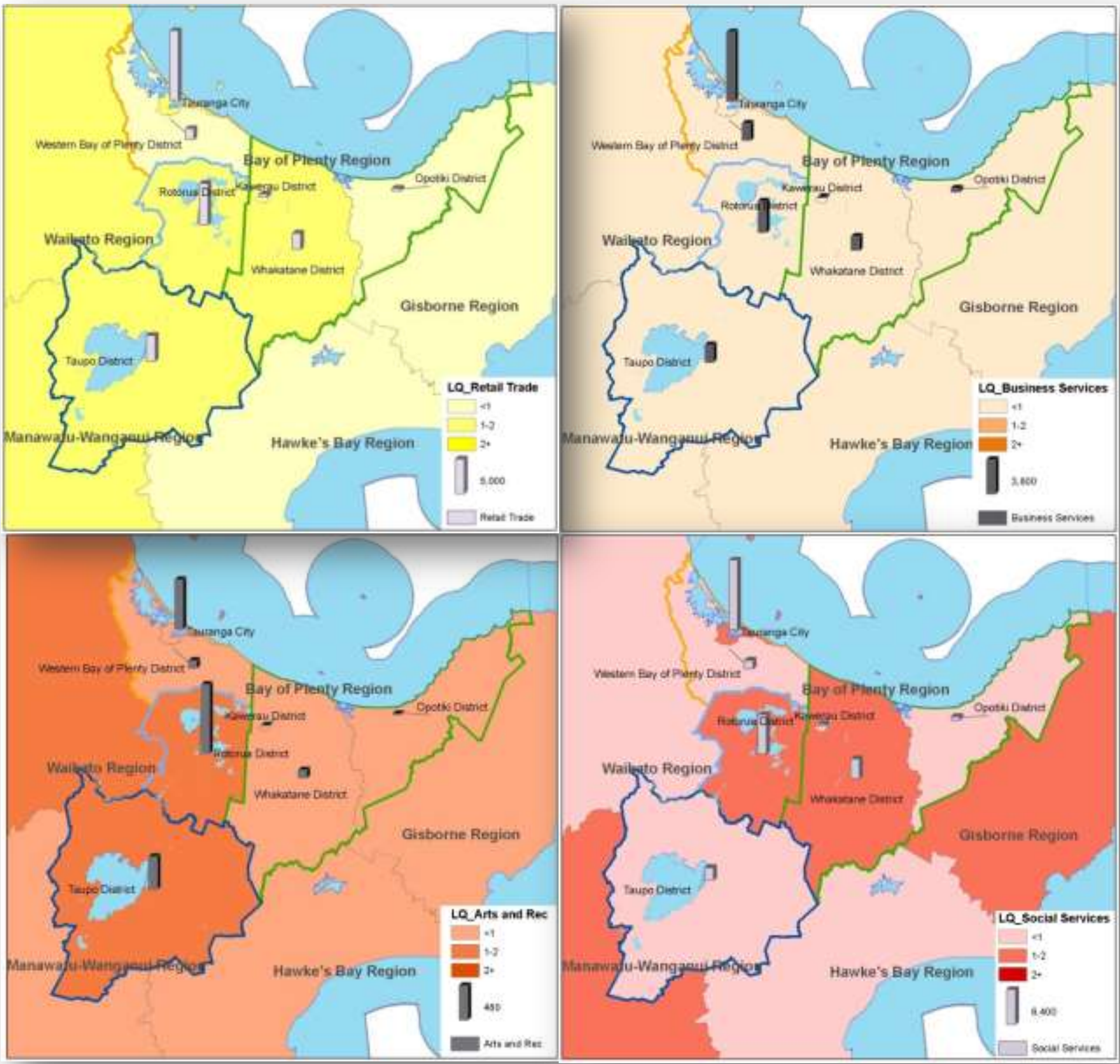
The figures below show 'hot spots' where an area has a relatively high concentration of employment in a particular industry. These concentrations are measured using a concept called " location quotient". A location quotient is a ratio: it measures the concentration of employment by a given sector in an area relative to New Zealand as a whole. When the ratio is larger than 1.0, the percentage employed in that sector locally is higher than New Zealand average. Likewise, when the ratio is smaller than 1.0 the percentage of people employed in this industry locally is smaller than average. This provides an indication of where an area currently has particular strengths.

For example, the pattern for the eastern area appears consistent with rural centres, with a focus on and relative strength in agriculture and processing. However, the high location quotients suggest that the area relies on a few industries. This implies a change in these industries, for example decreased exports, would have substantial implications for their economic performance. Equivalently, they may be substantial beneficiaries from long term growth in these sectors.

Figure 10 Location quotients and employment, by sectors and TA, Bay of Plenty (2012)



Note: The shading/colour highlights that whether the sector is important in relative terms – i.e. having a higher than average share of workers. The bar represents the number of FTEs in a given sector in a particular area, indicating whether the sector is important in absolute terms – i.e. having many workers. Taking the two together indicates whether a sector is important in both relative and absolute terms, or whether it is a niche (relatively important but small).


Tauranga City
Western Bay of Plenty District
Bay of Plenty Region
Opotiki District
Rotorua District
Kawerau District
Waikato Region
Whakatane District
Gisborne Region
Taupo District
Manawatu-Wanganui Region
Hawke's Bay Region
LQ_Retail Trade
<1
1-2
2+
5,000
Retail Trade
LQ_Business Services
3,800
Business Services
LQ_Arts and Rec
480
Arts and Rec
LQ_Social Services
Social Services

2.2 Key sectors

The Bay of Plenty region has a resource base combined with a natural and built environment that gives it a comparative advantage in a number of sectors.

BERL's (2011) update to the Bay of Connections Regional Growth Strategy noted the following key strengths and opportunities for the region.

Figure 11 Bay of Connections Strengths and Opportunities

Strengths

- Growing population
- Proximity and accessibility to major domestic markets (Auckland, Waikato) and the Upper North Island
- A major tourism area (part of the golden triangle for international)
- Excellent infrastructure
- Largest export port in NZ with direct rail links to Auckland, and deep water to cater for new generation ships and the cruise market.
- Rich in natural resources
- A strong base of innovative entrepreneurial action
- Major timber growing and processing area
- Strong brand and recognition in fruit growing especially Kiwi-fruit
- Deep phase volcanic soil and high-tech infrastrcuture to support horticulture.

Opportunities

- Meet sector demand for skilled people through education, training and internal migration
- Aquculture
- Geothermal development for primary energy and downstream users
- Attracting foreign investment and manufacturing developments
- Growth in high-tech manufacturing exports
- Harnessing marine resources for future economic development
- Location/distribution of population growth
- Develop tourism offering beyond main international attractions and become a hub for inbound tourism
- Implementation of a tertiary education partnership that includes University, Polytechnic and Wananga that provides seamless delivery and research capability
- Development opportunities around energy generation, particularly geothermal and clean energy
- Become the Green Window for New Zealand via economic growth from renewable and sustainable resources
- Further processing of primary production
- Transport infrastructure improvements to assist Upper North Island linkages

A challenge for policy makers posed by this presentation of the region's strengths and opportunities is to move the focus from "what can we do?" to "what should we do?"

The key sectors outlined below focus on maximising the opportunities for growth based on both the comparative strengths and the potential of the region. We begin by examining how the key sectors have grown (in terms of FTEs and relative to other sectors in the Bay of Plenty and New Zealand overall).

We then examine where these sectors are located. This will help to show where the growth is likely to occur as these key sectors grow in line with the Bay of Connections Strategy, and which areas and sectors may be positively or negatively impacted by external factors.

BERL's (2011) situational analysis identified 13 key sectors. The Bay of Connections is focusing on these sectors to add to employment opportunities and the region's growth potential. The inner wheel reflects areas that cut across all or most of the 13 key sectors.

Figure 12 Bay of Connections key sectors

The Bay of Connections Growth Strategy (December 2011) details features of the region's geography/climate, infrastructure and economy that help to explain the competitive advantage of the key sectors. It also explains the Bay of Connections Strategy framework and the four criteria required for a successful regional sector strategy that were used to identify the sectors where the growth potential lies. The criteria for success are that a sector:

- is based on a regional capability or comparative advantage (significant employment and GDP growth and evidence of strength in the region relative to other regions[7])
- is aligned with nationally competitive sectors i.e. globally competitive
- has strong sector buy-in and leadership
- has areas/issues where intervention can support transformative growth.

[7] Some of the region's recent growth has been driven by population-based industries. Forward looking growth strategies should not be based on population growth industries, rather based on leveraging the economy's productive industries and comparative advantages

1.1.8 Employment in the Bay of Plenty key sectors in 2012

The latest figures, for 2012, show that around one third (31 percent) of the region's employment is contained in the 13 key sectors. The top three sectors (by FTEs) for each area are colour coded in the table below.

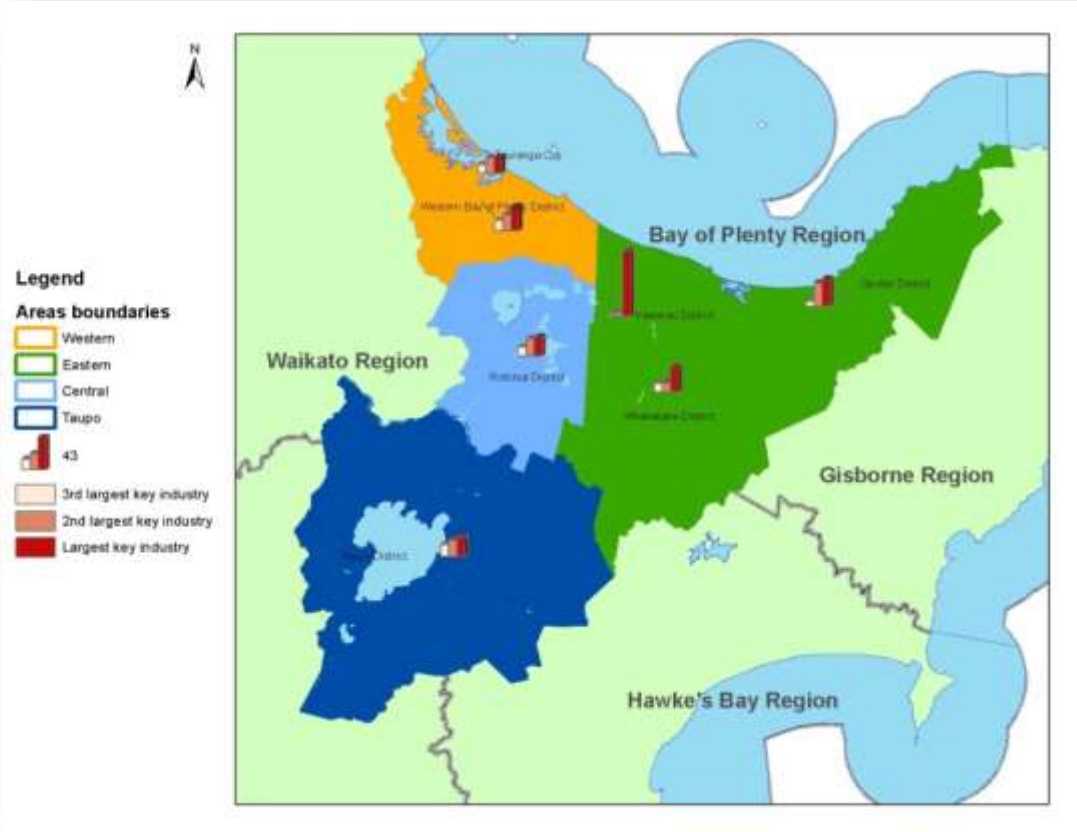
Table 6 Employment in key sectors, by area, Bay of Plenty (2012)

Key sectors, 2012 (FTE employment)	Western	Central	Eastern	Taupo District	BoP Region	New Zealand	BoP % of NZ
Aquaculture	283	3	0	30	316	3,389	9.3%
Forestry	1,000	2,159	1,584	1,091	5,834	28,175	20.7%
Kiwifruit	3,146	104	863	82	4,195	15,577	26.9%
Dairy	2,215	1,076	1,712	777	5,780	57,449	10.1%
Other Food Cultivation & Processing	2,284	563	477	254	3,578	67,898	5.3%
Energy	376	83	154	259	871	7,533	11.6%
Transport & Logistics	2,849	838	239	359	4,284	47,916	8.9%
ICT	641	157	30	44	872	51,923	1.7%
Marine	195	64	74	34	366	8,025	4.6%
Sport & Recreation	782	507	138	365	1,793	20,956	8.6%
Tourism	2,698	1,999	581	1,235	6,513	89,917	7.2%
Emerging Techs	666	231	74	96	1,068	17,471	6.1%
Meat	955	437	217	400	2,009	55,060	3.6%
Key sectors sub-total	***18,090***	***8,221***	***6,143***	***5,026***	***37,480***	***471,291***	***8.0%***
Other sectors sub-total	***44,232***	***19,818***	***11,487***	***8,755***	***84,293***	***1,407,955***	***6.0%***
Total Industry	**62,322**	**28,039**	**17,630**	**13,781**	**121,772**	**1,879,245**	**6.5%**
Key sectors as % of area total	*29%*	*29%*	*35%*	*36%*	*31%*		

source: BERL Regional Database, 2012

The Data tables in the Appendix have the detail behind the following figures (page 26).

Figure 13 Employment in top three key industries, by TA, Bay of Plenty (FTEs, 2012)



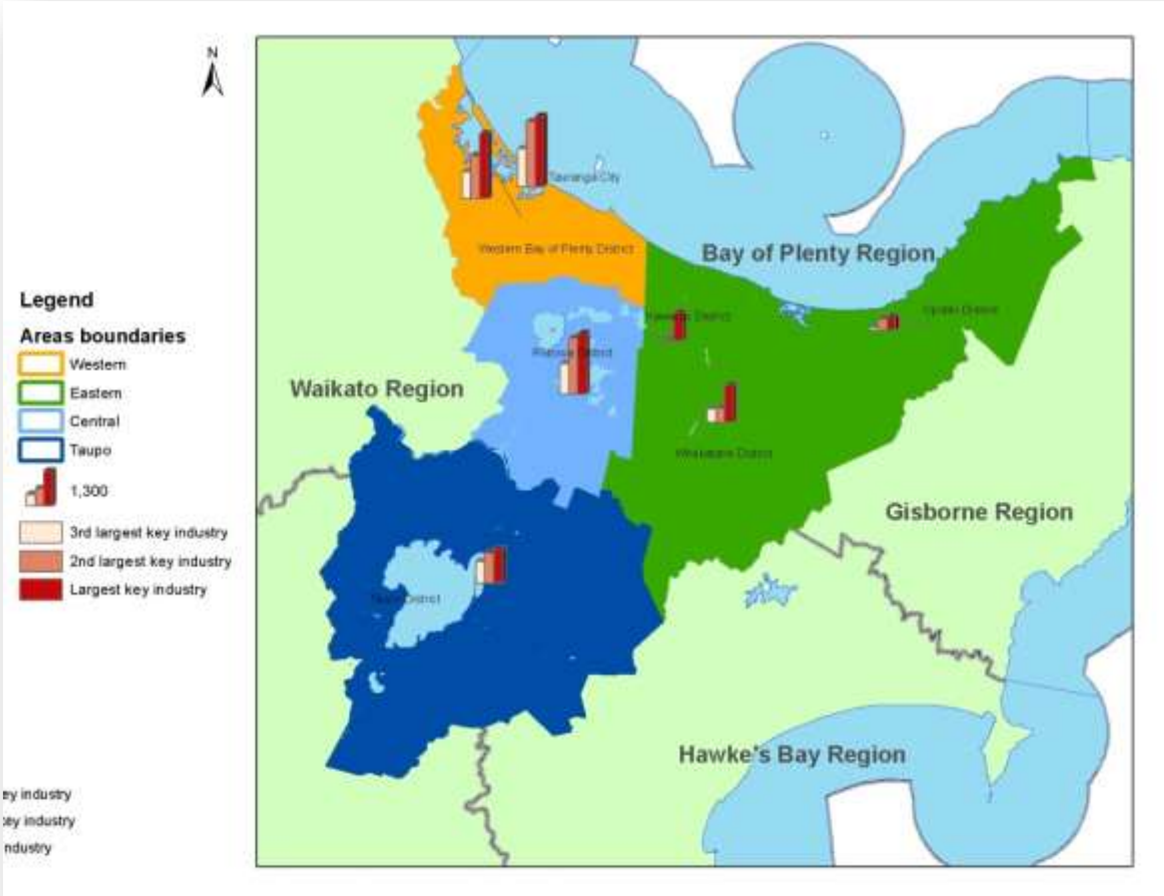
In the Western and Central area, employment in the top three key industries is more evenly spread than in the Eastern areas. Kawerau, for example, is a highly specialised area:

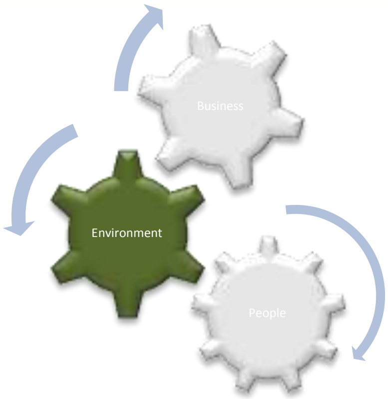
- around two in five workers are employed in the ten key industries (1,140 out of 2,720 FTEs);
- 87 percent of its key industry employment in the forestry industry (995 of the 1,140 FTEs).

This means that Kawerau is leveraged to take advantage of growth in this industry. The flipside of this strength is that it is less diversified than areas such as Tauranga, Rotorua or Taupo. In Tauranga, for example, only just over one in five works are employed in the key industries and the largest key industry is transport and logistics which has 23 percent of its key industry FTEs.

From a bigger picture, future-looking perspective, less diversified areas are at greater risk of downturns in a key industry – be that as a result of global events or local events, such as the impacts of the PSA outbreak for the kiwifruit industry. Other industries such as aged-care, health and social services will grow proportionate to the population but this is not the focus of the Bay of Connections Growth Strategy.

Figure 14 Employment in top three key industries, by TA, Bay of Plenty (% of total key industry employment, 2012)





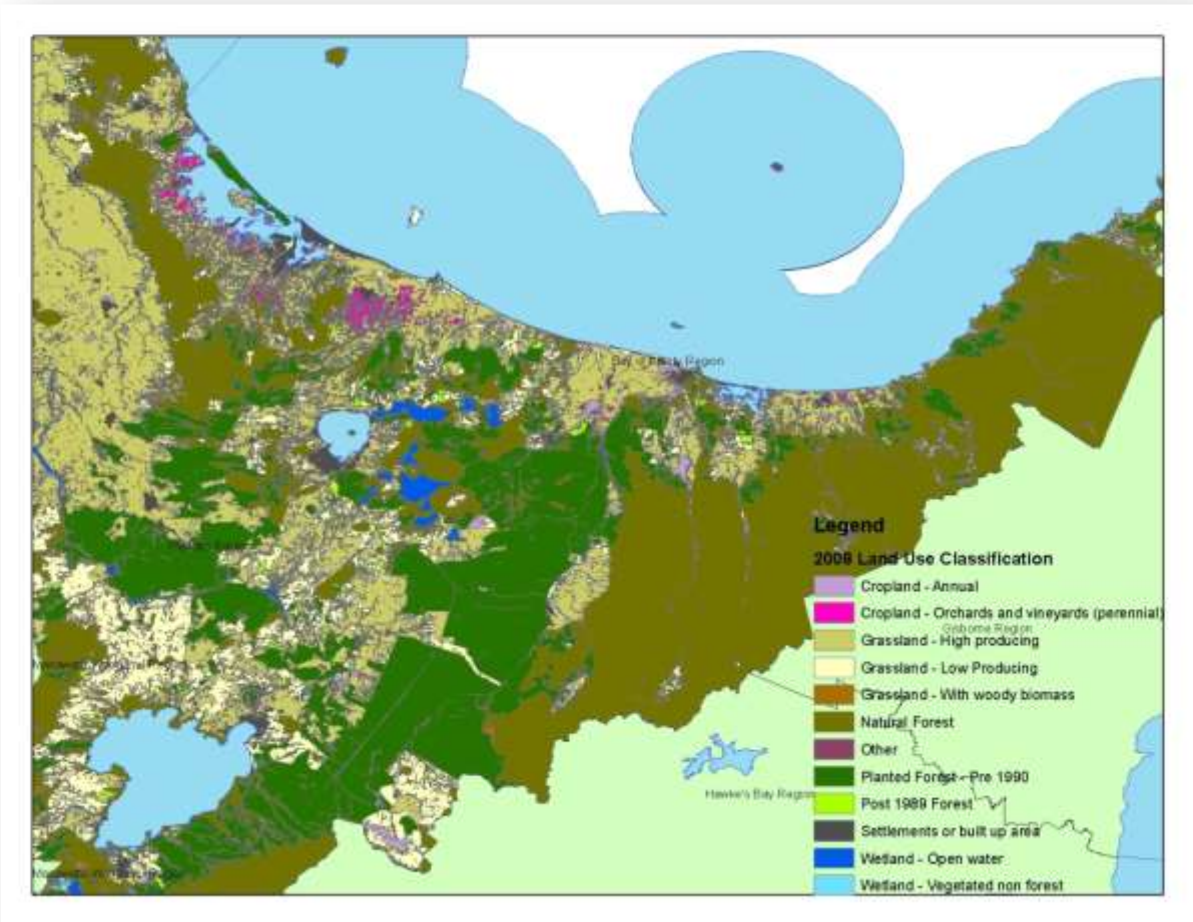
3. Environment

People and businesses are two important ingredients to the Bay of Plenty's social, economic, and cultural vitality. Another important ingredient that underpins the liveability and comparative strengths of the region, and its various areas, are its natural and built resources.

In this section we overview the land-based resources that enable and support the region's people and businesses.

3.1 Land use

"The region also has an abundance of coastal, forestry and geothermal resources. Agriculture, natural resources and tourism are the major industries in the Bay of Plenty. The most common agricultural land uses in the region are horticulture, dairy, grazing and sheep farming. Notable horticultural crops include kiwifruit, apples and avocadoes." (Bay of Plenty Civil Defence Emergency Management Group , 2012: 8)



The land use by primary industries can be seen below in the large stretches of highly productive grass land (mustard), commercial forestry (dark green), and blocks of orchards (bright pink). The land currently used for primary industry is interspersed with natural forest around the region, and low-producing grassland to the southwest of the region (above and around Lake Taupo).

3.2 Infrastructure

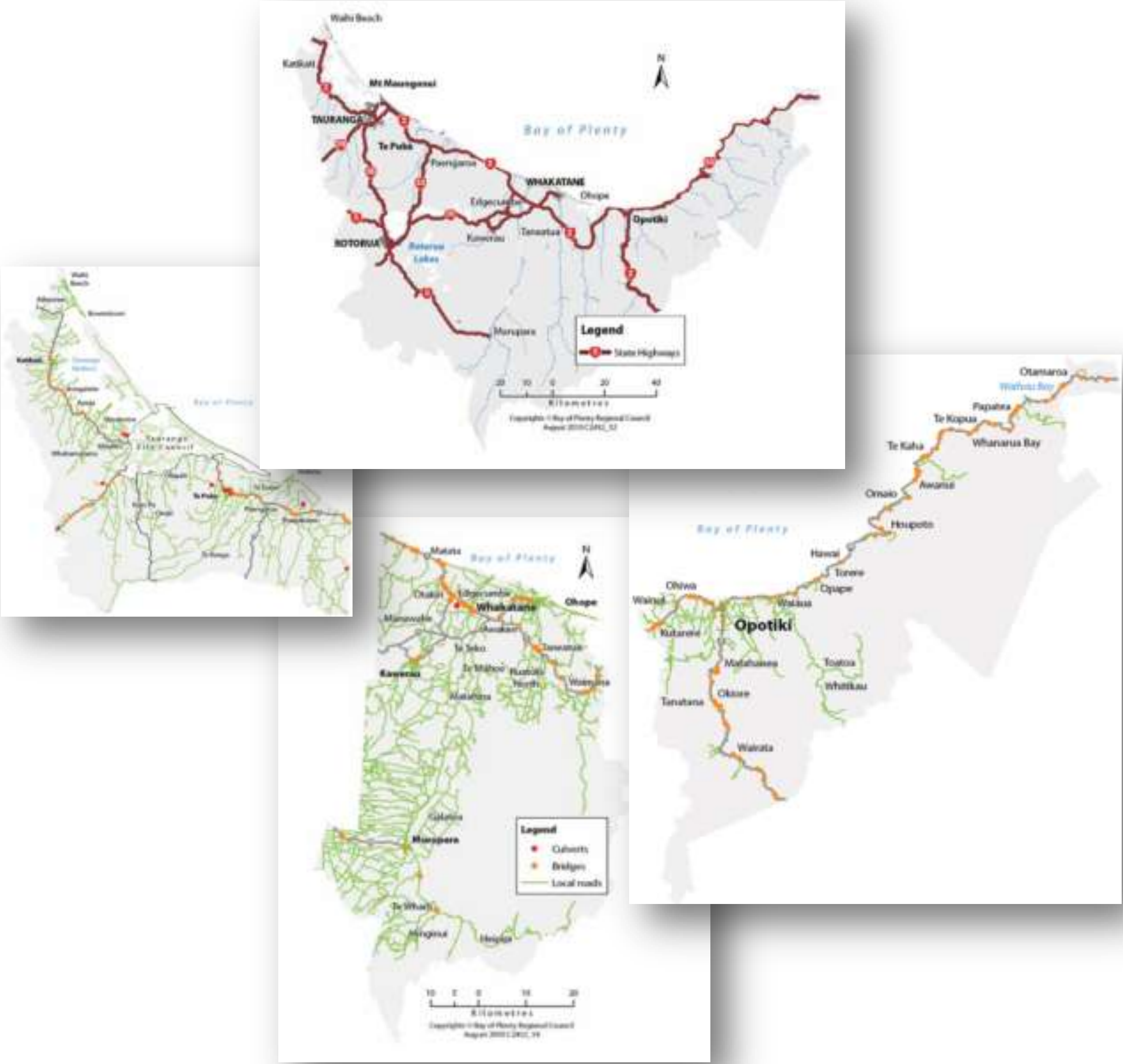
Infrastructure is the physical substructure or underlying systems necessary for an economy to function, such as transport networks, water systems and stormwater facilities. Infrastructure provides more than just basic services. It can be thought of as an enabler: with it there are options. Planned well, infrastructure can lift productivity, ensure a robust and secure system of basic services and support a high quality living environment. As events in Christchurch have shown, the value of infrastructure is often only noticed by the public when things go awry.

The BERL/Ascari report 2012 showed that, generally, infrastructure is adequate to meet growth needs but insufficient to achieve the government growth targets. Furthermore, the report noted an important juncture requiring the region to invest either in an infrastructure –lead strategy or one driven by the regions natural and life-style capital. Plans that do not consider both aspects carefully may not be as successful as they could be.

3.2.1 Roads

There are 4,460 kilometres of roads in the region, most of which are sealed. The key roading projects planned for the region are set out in the Regional Land Transport Strategy 2007 (RLTS 2007). It should be noted, however, that due to limited funds, and competition for Transit New Zealand funding, these projects will not necessarily be completed on-time. BERL has indicated that spending on roads in the region is 14.6 per cent below the national average per capita. The spend is not spread equally over the sub-regions, therefore it will have different implications for investment and growth.

Figure 15 State highways (top), local roads/bridges and culverts (bottom)



This highlights the importance of local government having a clear growth strategy and understanding the implications of this for the demand/supply of infrastructure. This will enable local government to advocate for the right investment in the right locations in the right quantities. However, the central government presently has significant pressures on the transport budget for regions such as Auckland with its investment into urban transport for commuters and freight, and the Christchurch rebuild. The concept of the settlement hierarchy may assist in identifying where the pressure points for investment will be and will build over time.

3.2.2 Port

The Port of Tauranga is New Zealand's largest export port by volume, and the second largest container port. 70 per cent of container traffic to Sulphur Point is serviced by rail, but 75 per cent of traffic in bulk products (mainly logs) on the Mount Maunganui side is serviced by road.

UNISA[8] commissioned research into the potential of the Port in the future. This research shows that there is sufficient storage to cope with the expected increased volumes of bulk goods at Mount Maunganui and of containers at Sulphur Point over next 30 years. In addition, there is the capacity to extend the Sulphur Point container wharf by 285 metres to the south."

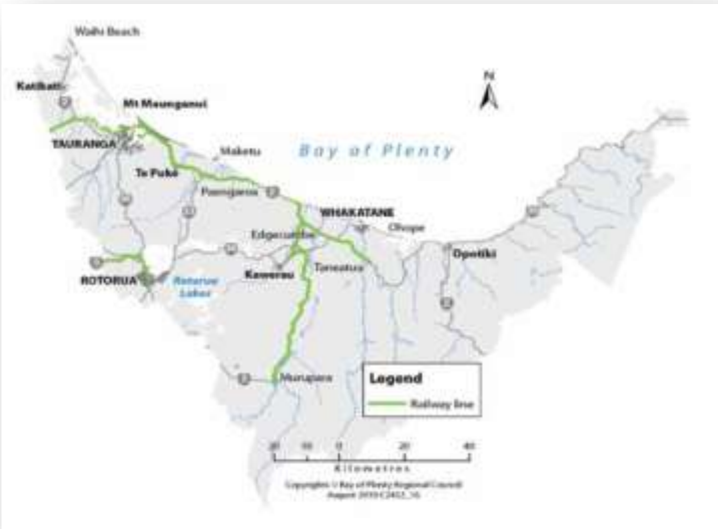
Container throughput at the Port is predicted to grow by between 2.5 percent and 3.1 percent per annum over the next 30 years. Bulk good throughput will also grow at between 1.7 percent and 2.3 percent each year.

The Port has also been successful in securing Resource Consent to dredge the harbour. The first stage of dredging is due to start in 2014 and will make Port of Tauranga the first port in New Zealand capable of hosting container ships with a capacity of 5,000 to 6,000 TEU. These new ships have lower operating costs and will enhance the competitiveness of New Zealand exporters and importers by lowering freight costs.

The recent investment in PrimePort Timaru and the expansion of the MetroPort facility will also support further growth. The Port is well placed to support future growth of the region as long as the strategic roading network and rail system are sufficient to enable the movement of freight to and from the Port of Tauranga.

3.2.3 Rail

The rail network totals 229 kilometres, linking the port to the Waikato and Auckland and the major forestry centres to the east and south. Rail plays a crucial role in the regional economy as the means of transporting imports from the Port of Tauranga to the MetroPort in South Auckland as well as the means for much of the exports sent to the Port of Tauranga for shipping.



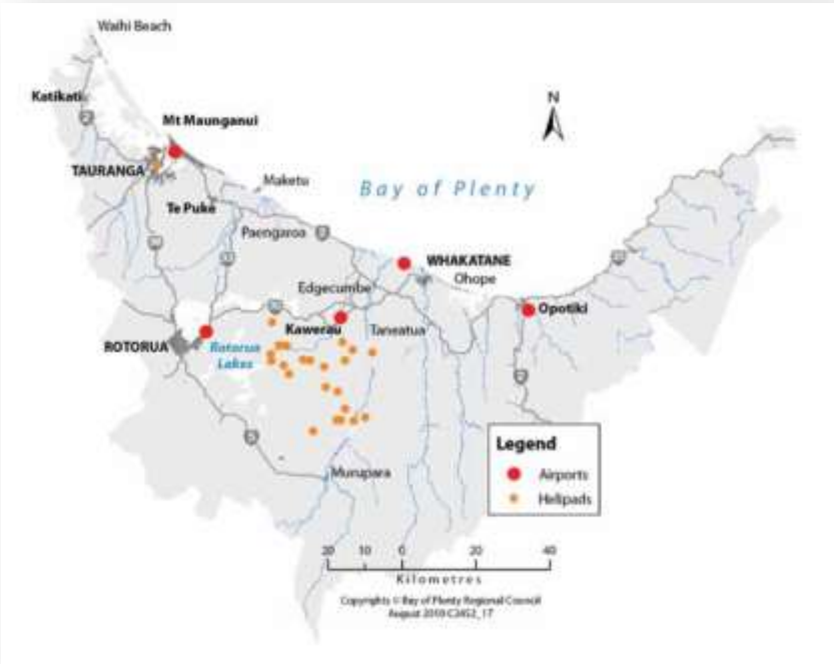
8 the territorial authorities from Tauranga city, Auckland, Whangarei district and Hamilton city as well as the regional councils from Bay of Plenty, Waikato and Northland.

Rail is also an important link between the port and forestry processing in Kawerau and through to Murapara. This transport link removes a substantial volume of heavy traffic from the roads, reducing traffic volumes/risk as well as wear and tear on the local and state highway network.

The UNISA study indicates that there is relatively little comparable international evidence on shipping costs along the supply chain, but given the quality of New Zealand's transport infrastructure it is likely that New Zealand's domestic freight sector is relatively high-cost. Because domestic freight costs are large relative to sea freight costs, changes to the New Zealand port sector that require increased domestic cargo movements may have a large impact on importers and exporters from more distant regions.

3.2.4 Air services

Commercial airports operate in Rotorua, Tauranga and Whakatane. Rotorua has the only fully jet capable trans-tasman regional airport in the Bay of Plenty. A draft report by APR Consultants in 2011 estimated that Rotorua Regional Airport's annual contribution to the regional economy is more than $50 million. This highlights the importance of a transport node in a specific location making a substantial contribution to the regional economy as a whole.



3.2.5 Telecommunications

Tauranga is higher than the national averages for telephone and mobile access, but mobile coverage is limited in parts of the east. Environment Bay of Plenty is leading investigations for the Bay of Plenty Broadband Initiative in partnership with the Bay of Plenty territorial authorities.

Tauranga, Rotorua, Taupo, Turangi, Te Puke, Whakatane, Kawerau, Katikati, Opotiki, Te Puna, Ohope, Omokoroa, Waihi Beach, Edgecumbe and Murupara now have access to broadband connections between 10Mbps and 20Mbps.

3.2.6 Energy

The Bay of Plenty's energy consumption is around 7% of that used nationally. The Bay of Connections Energy Strategy states that there are major energy development opportunities for the region including further exploitation of the region's geothermal resources for large-scale electricity generation and direct heat supply, and the use of the region's abundant forestry resources as a basis for liquid-fuel manufacturing, building on the research underway by Scion and other regional researchers. These are sustainable energy opportunities, with a very low carbon footprint.

A potential constraint on the development and use of electricity in the region is the capacity of the national grid, and there are major concerns about the security of supply.

The Edgecumbe substation exposes the east in terms of electrical energy security. This raises issues both in terms of the risk of power outages and shortages for residents and businesses, but also for investment incentives for (potential) businesses in the east. An assessment by BERL into barriers to the labour market in the Far North District in 2008 found businesses in Northland faced similar issues, in terms of challenges due to a lack of energy security.

Local government has a role in terms of stopbank specifications (e.g. for a 1-in-50-year event or a 1-in-100-year event), and potentially in working with power companies and central government in relation to on-going investment and risk management.

Future implications

The challenge in making the case for new infrastructure projects also relates to the complexity in understanding the implications of these investments, particularly their impact on productivity. Although it is widely acknowledged that infrastructure investments can raise productivity and grow the economy, it is becoming increasingly clear that standard cost-benefit analyses do not provide good evidence of the productivity enhancing nature of various investment options. This reflects the level of uncertainty and the absence of coherent guidelines around measuring productivity gains, which makes the identification of high-value high-return infrastructure projects more difficult. In recent years there have been advances in our understanding and measurement of what are known as 'wider economic benefits' of transport projects – that is economic benefits that are not captured in traditional cost-benefit analyses. The most important of these advances have been in the field of agglomeration economies. There also need to be further clarity on the constraints in the current infrastructure network to establish the level of investments needed.

Appendix 1 Data tables

Note: Table 3 (page 9) shows the value added output by sector and area in the Bay of Plenty.

Table 7 Employment, by area, Bay of Plenty (2012)

Sector	Employment (FTEs)					
	Western	Central	Eastern	Taupo District	BoP Region	New Zealand
Primary	6,770	2,590	3,190	2,260	14,810	144,200
Manufacturing	6,720	3,390	2,360	950	13,420	219,870
Construction	5,630	2,080	1,390	1,380	10,480	161,270
Wholesale and Distribution	6,990	2,340	700	770	10,800	189,290
Retail Trade and Services	11,530	5,950	3,050	3,680	24,200	328,150
Business Services	9,420	3,410	2,110	1,920	16,870	358,670
Arts and Recreation Services	790	960	140	460	2,340	31,470
Social Services	14,470	7,330	4,690	2,370	28,860	446,340
Total	**62,320**	**28,040**	**17,630**	**13,780**	**121,770**	**1,879,250**

Source: BERL Regional Database, 2012

Table 8 Productivity, by area, Bay of Plenty (2012)

Sector	Productivity (2012$ per FTE)					
	Western	Central	Eastern	Taupo District	BoP Region	New Zealand
Primary	81,400	152,700	119,600	160,400	114,100	106,700
Manufacturing	135,300	149,600	148,000	143,300	141,700	131,400
Construction	59,400	59,600	59,700	59,400	59,500	59,500
Wholesale and Distribution	132,000	131,600	132,200	135,800	132,200	129,300
Retail Trade and Services	56,300	51,000	57,500	50,600	54,300	54,900
Business Services*	112,500	121,000	119,500	151,900	119,500	142,300
Arts and Recreation Services	69,800	69,900	69,000	69,800	70,100	68,200
Social Services	67,000	67,400	65,600	64,300	66,700	67,400
Total	**103,400**	**108,100**	**111,000**	**113,000**	**106,700**	**109,900**

** excl owner-occupied dwellings sector*

Source: BERL Regional Database, 2012

Table 9 Business units, by area, Bay of Plenty (2012)

Sector	Business Units (number)					
	Western	Central	Eastern	Taupo District	BoP Region	New Zealand
Primary	3,973	1,139	1,606	694	7,412	74,227
Manufacturing	947	331	192	211	1,681	22,040
Construction	2,439	594	434	549	4,016	50,005
Wholesale and Distribution	1,423	489	222	290	2,424	35,904
Retail Trade and Services	2,870	1,231	716	795	5,612	74,783
Business Services	8,130	2,354	1,642	1,609	13,735	203,805
Arts and Recreation Services	288	175	71	117	651	9,935
Social Services	1,291	616	442	241	2,590	33,682
Total	**21,361**	**6,929**	**5,325**	**4,506**	**38,121**	**504,381**

Source: BERL Regional Database, 2012

Table 10 Business size, by area, Bay of Plenty (2012)

Sector	Business Size (FTEs per unit)					
	Western	Central	Eastern	Taupo District	BoP Region	New Zealand
Primary	1.7	2.3	2.0	3.3	2.0	1.9
Manufacturing	7.1	10.2	12.3	4.5	8.0	10.0
Construction	2.3	3.5	3.2	2.5	2.6	3.2
Wholesale and Distribution	4.9	4.8	3.2	2.7	4.5	5.3
Retail Trade and Services	4.0	4.8	4.3	4.6	4.3	4.4
Business Services	1.2	1.4	1.3	1.2	1.2	1.8
Arts and Recreation Services	2.7	5.5	2.0	3.9	3.6	3.2
Social Services	11.2	11.9	10.6	9.8	11.1	13.3
Total	**2.9**	**4.0**	**3.3**	**3.1**	**3.2**	**3.7**

Source: BERL Regional Database, 2012

Appendix 2 References

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