

**Confidential**

# **Kāpiti Coast's new economy**

**An assessment of the 'new economy'  
approach to economic development on the  
Kāpiti Coast**

**Final report to Kāpiti Coast District Council**

**December 2011**



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## Key points

The Kāpiti Coast District Council is planning for the future. The Council wants to make Kāpiti ‘a great place to live, work and play’ while preparing for the economic transformations that are likely to happen. It is especially focused on the need to transition towards a low-carbon economy.

While climate change and resource constraints are likely to affect the New Zealand and Kāpiti Coast economies, other global and domestic trends also need to be considered. These trends will have complementary and conflicting impacts, which Council needs to consider as it plans for the future.

### Council can foster a low-carbon future...

If focusing on a **low-carbon economy** is the highest priority, then Council can:

- support the growth of services exports, especially business services, design and development of new products, education, and ecologically friendly tourism
- facilitate a skilled, innovative, and adaptable manufacturing industry, as envisioned by the Clean Technology Centre in Otāki
- support a boutique horticulture industry that uses the rich soil in the District
- focus on reducing distances and time spent driving, which will make life easier for older families, commuting workers and older residents
- focus on energy-efficient buildings, using new construction and the retreat from low-lying areas as an opportunity to improve buildings.

### ...but may have additional priorities

If **other priorities** are also important, then Council can:

- support **local employment** by developing service sectors – particularly retail, tourism, and business services
- develop **career possibilities** for Kāpiti residents by encouraging larger employers to locate in the District and strengthening transport links to Wellington
- support **local agriculture** by providing networks within local communities and fostering regional exports
- support the **ageing population** by providing more housing and facilities for people with a wide range of incomes, limited mobility, and greater health care needs.

### Specific actions can support a low-carbon future

Council is working to support a low-carbon future. Specific actions that can be continued or developed further are:

- determine what a **lower-carbon transport network**, consistent with the population and vision of the Kāpiti Coast, could look like. Work with central

government to ensure consistency between national and local visions and to promote local transportation priorities

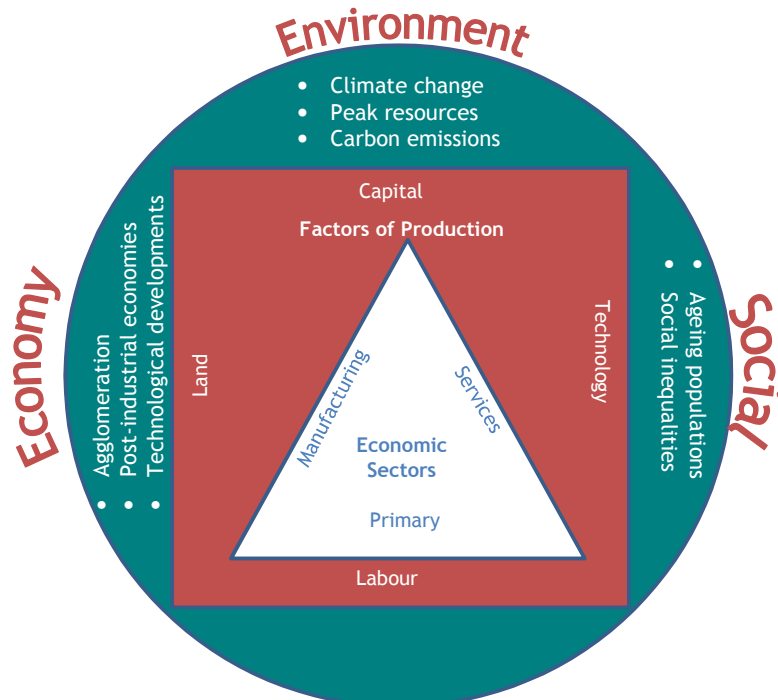
- work with **local horticulturalists** to determine how the Council can support them. Some possibilities are: regional branding initiative, farmers' markets, regional food pavilion, regional food event, development of a light processing facility
- develop a **strategy for clean technology manufacturing**, with links to tertiary education, engineering firms, and design capabilities, to overcome the relative isolation of Otāki and substitute for agglomeration effects
- conduct **research on commuters** to develop strategies for encouraging public transport, reducing commuting, and encouraging businesses to relocate to the District. This research would have implications beyond the Kāpiti Coast, and may be eligible for partial funding from central government.

However, each of these activities has implications for other priorities. The Council therefore needs to decide how to meet the multiple priorities.

### Framework for future development

Figure 1 depicts the trends likely to have impacts on Council, and the aspects of society they are likely to affect.

**Figure 1 Trend impacts**



Source: NZIER

## Quantifying the impacts

Predicting the future always entails great uncertainty. To inform Council's decision making process, we have provided four scenarios which included indicative analysis of potential impacts of different futures.

These scenarios are about aspirations: they suggest what the Kāpiti Coast could achieve if the industries and their businesses are able to develop. They are implicitly about relative success of the industries, about comparisons across the scenarios, rather than absolute numbers. Having said that, our assessment of the potentials of these scenarios are presented below:

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### ***Expected outcomes of scenarios, 2021***

<b>Scenario and impact</b>	<b>Annual GDP impact</b>	<b>Employment impact</b>
	<b>(\$m per year)</b>	<b>(jobs per year)</b>
Clean technology	10.3	87.5
Business services	40.8	177
Tourism	27.4	710
Retirement services	23.3	264

Source: NZIER

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There are possibilities for combined, synergistic impacts across these sectors. In that case, the estimates above represent the sector contributions to total impacts.

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# 1. Introduction

The Kāpiti Coast District Council is looking to the future and wants to understand how it can promote a vibrant economy that keeps people living and working in the District, while responding to anticipated future national and global events. The Council is particularly interested in the role that it can play in transitioning the District towards a low-carbon economy.

NZIER has been asked to consider:

- the major trends that are expected to affect New Zealand and the world over the next twenty or so years
- how they are likely to affect the Kāpiti Coast
- what Council could do to best position the District to respond.

This report begins with a summary of background material to provide context, including:

- a stocktake of key aspects of the District
- the District's vision for itself
- significant trends likely to affect New Zealand.

More detailed discussion of the background is included in the appendices. Appendix A contains detail on the stocktake of the Kāpiti Coast District. Appendix B discusses major economic trends that may affect the Kāpiti Coast.

We then discuss what Council could do to plan for the future. We discuss the benefits and risks from supporting a transition towards a low-carbon economy. We then analyse several scenarios of potential Kāpiti Coast futures. From this work, we develop some specific actions that could produce future improvements in the District.

## 2. Setting the context

### 2.1 Stocktake of the Kāpiti Coast District

This section provides a summary of the Kāpiti Coast's natural resources, connections, population and demographics, and economy. A more detailed stocktake is provided in Appendix A.

#### Natural resources

The Kāpiti Coast District is part of the Wellington region, and is located on the West Coast of the North Island. It has an area of about 730 km<sup>2</sup>, about 0.3 percent of New Zealand. It includes Kāpiti Island, a 19.7 km<sup>2</sup> island that is the site of an important nature reserve. The District has some 40 kilometres of coast line. The District has a climate with warm summers and cool winters, but is exposed to windy conditions. The climate and soils are particularly suitable for horticultural production.<sup>1</sup> The District's water resources are sourced from a mixture of streams and rivers, aquifers, and rainfall.

#### Connectivity

There are several land transport connections:

- State Highway 1 runs the length of the District
- The Wellington Northern Corridor is a Road of National Significance (RoNS)
- The North Island Main Trunk Railway carries passengers and freight
- Metlink connects the Kāpiti Coast to Wellington City via commuter trains and buses

Other physical connections are being developed or expected. In October, the airport at Paraparaumu started a regular service to Auckland, and more connections are expected.

Development of telecommunications infrastructure is ongoing. Telecom and Vodafone report good 3G coverage for most of the population of the District, providing access to mobile telephony and data. TelstraClear has a cable network that services some of the District, around Paraparaumu. A local project has installed some broadband access via fibre optics in Otāki, and the Clean Technology Centre in Otāki also has Ultra-Fast Broadband (UFB). The Kāpiti Coast as a whole is expected to receive UFB by 2019.

#### Population and demographics

At the 2006 Census, the Kāpiti Coast had a resident population of 46,200. Statistics New Zealand estimates that its population in 2011 is 50,600. The Kāpiti Coast's

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<sup>1</sup> Mackay et al (2005), also MfE (2008).

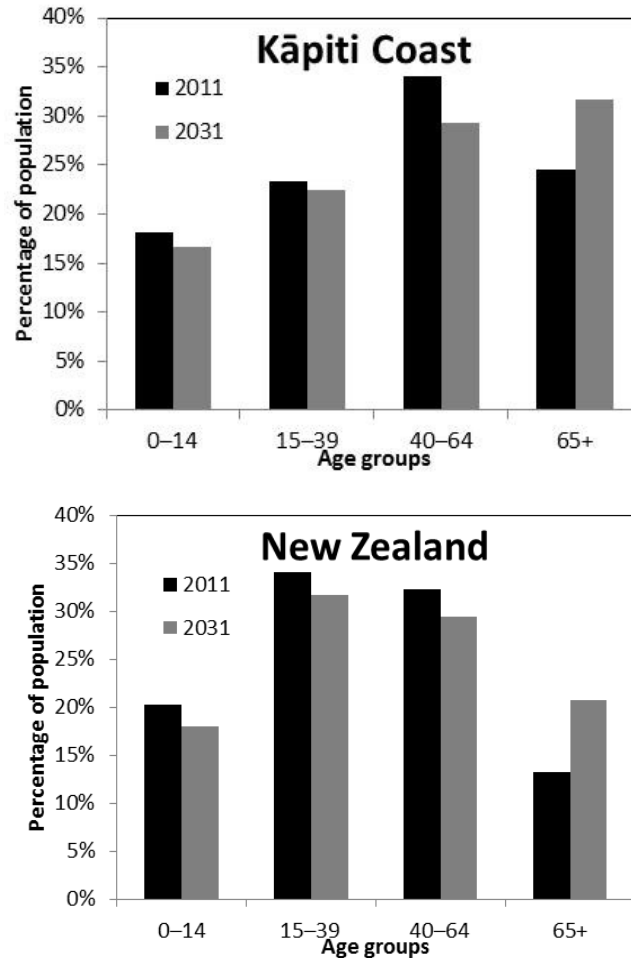
population is expected to grow at 1.0 percent per year until 2031, when its population will reach 60,900.

The Kāpiti Coast's growth rate is faster than the rate Statistics New Zealand expects for the Wellington region or New Zealand as a whole. This implies that, by 2031, the population of Kāpiti Coast will account for a greater share of the population of the Wellington region, and New Zealand.

Figure 2 compares the age profile of the Kāpiti Coast's population with the profile of New Zealand in general. It provides distributions for the estimated populations in 2011 and in 2031. The key point is the ageing of the population: the District is expected to have more older residents in the future, and have relatively more older residents than New Zealand as a whole.

**Figure 2 Kāpiti Coast's ageing population**

Percentage of total population



Source: NZIER, Statistics New Zealand

## Economy and recent performance

Statistics New Zealand does not publish statistics on the size and performance of the Kāpiti Coast economy. Based on regional employment figures, BERL (2010a) estimated the value add (a measure of GDP) of Kāpiti Coast District's economy to be \$1,080 million in 2009.

The growth in the Kāpiti Coast has been driven by an expanding services industry. Its contribution to Kāpiti Coast GDP has increased from 59 percent in 1999, to 87 percent in 2009. Retail trade, health care and social assistance, education, accommodation and food services, and construction are the largest sectors within Kāpiti Coast's services industry.

The primary sector increased slightly between 1999 and 2009, while the contribution of the manufacturing sector fell by \$18 million.

Since 2001, the number of employees in the Kāpiti Coast District has increased by a quarter. As with the estimated economic and business growth, this increased employment has occurred in the services industry. Employment in the manufacturing sector has not changed, and employment in the primary sector has fallen since 2001.

**Agriculture** is not a large employer in the Kāpiti Coast District. As presented in Table 12 (page 40), the number of agricultural employees in the District has fallen by a fifth between 2001 and 2010. Most of the employees work in horticultural industries, such as nursery and floriculture production, and fruit and tree nut growing. Pastoral activities, such as dairy cattle farming, are less important.

Landcare Research (2010) identified the large majority of the soils in the Greater Ōtaki area as having potential for increased horticulture production. To successfully expand these sectors, a number of barriers in the District need to be overcome. These barriers include high land prices, small scale of production, and lack of infrastructure. The report concluded that, if these barriers could be overcome, the Kāpiti Coast could benefit from the development of horticulture in the District.

**Manufacturing** as a share of the Kāpiti Coast economy fell between 1999 and 2009, while the number of employees in the sector did not change between 2001 and 2010. Food product manufacturing is the largest employer in the manufacturing sector, and the number of employees has grown significantly between 2001 and 2010. Other relatively large manufacturing employers include non-metallic mineral product manufacturing, fabricated metal product manufacturing, machinery and equipment manufacturing, and wood product manufacturing.

The country's first purpose-built Clean Technology Centre opened in November 2010, in Ōtaki. The associated business park comprises approximately 42 parcels of land and is intended to form a cluster of businesses focused on researching and commercialising clean technology.

**Services** contributed 87 percent of Kāpiti Coast's estimated GDP in 2009 and 90 percent of the jobs in the District in 2010. The largest employers are retail trade, health care, education, hospitality, and construction. To provide some relative scale to these sectors, each of these five industries has more employees than the primary and manufacturing sectors combined.

The recent report from Property Economics (2011) indicates that there is significant retail leakage to the rest of the Wellington area. That is, residents of the District are doing their spending elsewhere. The report does not quantify the amount of leakage, which is somewhat complicated. It is possible to get a general sense of the size of retail leakage. For example, Property Economics reports that the District currently has 20,850 households. The current retail expenditure was \$542 million in total, or about \$26,000 per household. By contrast, Statistics New Zealand reported national figures for per-household expenditure of \$20,278 for food and beverages, \$4,878 for clothing and footwear, \$12,059 for household goods and services, and \$8,344 for

hotels and restaurants.<sup>2</sup> It is likely that retail leakage is thousands or tens of thousands of dollars per household each year.

While Tourism is not specifically recorded as an industry by Statistics New Zealand, it is likely that those employed in the accommodation and food services, arts and recreation services, and retail trade sectors form at least part of the Kāpiti Coast tourism sector.

## Summary of the stocktake

The Kāpiti Coast has strong natural resources. The District has good land and climate for agriculture, but has little scope to achieve economies of scale. The landscape has high amenity values. Its working-age population is skewed towards mid- to late-career workers, who tend to commute out of the district. It has a high proportion of people over 65 years of age. In summary, it is a semi-rural satellite of a larger urban area.

The economy is mostly services. A large portion of services is targeted at local household consumption: retail service, food, and health care. However, there is significant retail leakage to the greater Wellington area. Some services are commercial, such as financial and professional, as well as components of real estate, construction, and other sectors. Some services produce exports for the region, especially tourism (food and accommodation, rental services, education). Manufacturing is a small part of the economy and declining, which fits the overall trend in New Zealand. Agriculture is a relatively small part of the economy by New Zealand standards.

## 2.2 Kāpiti Coast's vision for itself

The Kāpiti Coast community has developed a vision for the future of the District. This vision was developed as part of the Council's community planning process. In addition, the Council has adopted principles for an economic development strategy. This section briefly reviews the seven outcomes of the community's vision and the two economic development principles. This section has been informed by the District's Community Outcomes, through discussions with Council staff and members of the Kāpiti Coast community, and through the Draft Economic Development Strategy for Kāpiti Coast.<sup>3</sup>

### There are healthy natural systems which people can enjoy

The community wants to maintain and build on the existing natural qualities of the District. As part of this outcome, the Kāpiti Coast community wants to manage the coast, improve the quality of the District's rivers and streams, and protect vulnerable

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<sup>2</sup> Use of Income, Final Consumption Expenditure, Households by Item, Current Price, Annual (March). From Infoshare, National Accounts category: <http://www.stats.govt.nz/infoshare/>.

<sup>3</sup> Kāpiti Coast District Council (2011, 2009a, 2009b).



areas of native vegetation and wildlife. It wants to have an educated community that knows about its natural areas and how to care for them.

### **Local character is retained within a cohesive District**

This outcome is focused on recognising and protecting the nature and character of the communities that make up the Kāpiti Coast. As part of this outcome, the District will have high quality transport links between each community, which support all users. Likewise, the economic interdependence between the communities is recognised and the clustering of complementary businesses is supported.

### **The nature and rate of population growth is appropriate to community goals**

The Kāpiti Coast community wants to ensure that any future population growth occurs in a way that supports the goals of the District. Population growth will occur in a sustainable way and be supported by the efficient use of infrastructure including water, green space and roading. Any expected infrastructure problems will be resolved before new land is released for development.

### **The community makes wise use of local resources and people have the ability to act in a sustainable way on a day to day basis**

The District wants to reduce its dependence on finite resources, such as oil. It is also looking to increase the efficient use of renewable resources, including water use. Innovative design of buildings and infrastructure that reduces energy use will be supported. The community is encouraging the development of sustainable systems that will reduce the level of waste in the District and increase recycling. The productive agricultural potential within the District is acknowledged and preserved.

### **There is increased choice to work locally**

The community wants to increase the employment options within the District. It wants an environment where new businesses can be easily established, especially in food production and local manufacturing. It also wants the District to play a significant role in the career paths of young people.

To attract these kinds of jobs the District will focus on business development and ensure that all commercial and industrial areas are well designed, safe, and have access to public transport.

### **The District is a place that works for young people**

The Kāpiti Coast community wants the District to be able to cater to the needs of young people. This will enable young people to be able to spend more of their lives in the District. The community recognises that these needs are across educational and career opportunities, as well as access to affordable housing, health and entertainment.

## The District has a strong, healthy, safe and involved community

The District wants all members of its community to have access to the services they need. To ensure this occurs, the District needs a range of housing options, good public transport within the District, and quality local health services.

## Principles of economic development

The Council has worked to develop an economic development strategy. The strategy is founded on two principles:

*‘To make Kāpiti a great place to live, work and play’*

*‘To lay the foundations and set the direction for the likely transformation of the economy over the first half of the 21<sup>st</sup> Century’.*

The first principle touches on many issues: liveability, employment, keeping young people in the District, and more. The second principle is the reason for reports such as this one: the Kāpiti Coast expects economic changes, and the Council wants to lead the way in creating a resilient economy for residents.

## 2.3 Major global economic trends

This section discusses significant trends with future economic impacts. These trends also interact with each other, requiring decisions by governments, businesses, and consumers. A more detailed review of each of these trends is in Appendix B.

### Shift to low-carbon economies

With concerns about climate changes, economies are adjusting or planning to adjust to lower carbon emissions. One way to do this is to lower the carbon intensity of production – GDP per unit of carbon or greenhouse gases (GHG). Tourism and agriculture in New Zealand tend to be carbon intensive, while services other than tourism are less carbon intensive. Markets for eco-tourism and low-carbon technology are expected to expand.

### Climate change

Climate change is expected to have large impacts on global economies. Stern (2006) found that formal modelling of unmitigated climate change with global warming of 5-6°C would reduce global GDP by an average of 5 percent to 10 percent. Climate change in New Zealand, and the Kāpiti Coast District in particular, is expected to produce mixed results. The Kāpiti Coast could be warmer and wetter. Costs to respond to flooding or repair damage are expected to increase, but the District is also likely to have a better growing season.<sup>4</sup>

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<sup>4</sup> MfE (2008).

## Resource constraints

The quality and availability of some resources are falling. Demand for mineral resources is continuing to grow on the back of economic growth in the developing world. These resources include oil and phosphorus. Water resources are also becoming constrained. Freshwater is a key strategic and productive asset of New Zealand, and there are movements towards managing it sustainably. For all these resources, it will be important to use them more efficiently.

Declining resources and increasing demand are expected to lead to increased average prices, but also increased price volatility. Volatility causes uncertainty, which imposes its own economic costs. From a planning perspective, it is important to consider the impacts from both the average expected price increase and the range over which the prices may fluctuate. With higher probabilities that prices will surpass some critical threshold, communities need to consider how they will remain resilient to external shocks.

## Ageing population

New Zealand's age profile is expected to get older over the next twenty years. Under Statistics New Zealand's medium population projections, 20 percent of the population will be 65 and older in 2031. As this change occurs, a lower proportion of the population will be producing goods and services. It will also create increased demand for Government services, such as health care.

The ageing population is expected to affect the workplace:

*The proportion of the population aged 65 and over in the workforce increased from 6 per cent in 1991 to 12 per cent in 2006, and is projected to peak at 23 per cent in 2028 (Ministry of Social Development 2011).*

People over 65 in 2031 are projected to be 25 to 26 percent of adults. If their labour participation rate increases from 12 to 23 percent, then the increased over-65 workers will represent around 2.8 percent of adults. Labour force participation rates in New Zealand fluctuate a few percentage points over the economic cycle, but are around 68 percent. The additional over-65 workers will represent about 4 percent of the labour force. These additional workers may affect the workplace, but their total impact on production will be small.

## Technological developments

Technological development is the most significant source of economic growth over time. The on-going investment in this area is likely to drive future growth. Due to New Zealand's size, nearly all technology used here will be developed overseas. Having the capability to apply the latest technologies from around the world will deliver significant benefits.

## Agglomeration

Agglomeration creates productivity gains amongst businesses, because they are close to their competitors, customers and workers. The proximity reduces transport costs from suppliers to customers, allows for the easy exchange of ideas and information, and increases the pool of labour available to firms. These benefits increase with the scale of the economic centre. Infometrics (2011) and McCann (2009) suggest that New Zealand's small size relative to the rest of the world creates smaller gains from agglomeration.

## Post-industrial economies in developed countries

A long term trend in developed economies is the changing structure away from primary and manufacturing production towards services industries.<sup>5</sup> The shift of global manufacturing from developed countries to low-cost producers has allowed developed countries to develop sectors within the services industries. These sectors have included aspects of research and development, design, marketing, and other business services such as management consulting.

## Increasing social inequalities

While the poverty-related UN Millennium Development Goals are expected to be met by their deadline, the global financial crisis and current high food prices are slowing progress.<sup>6</sup> This suggests that the gap between the rich and poor is continuing to grow in many countries. New Zealand's social indicators have generally improved slightly between 1995 and 2009.<sup>7</sup> New Zealand still has a 'long-tail' in terms of the distribution of outcomes across education, health, and income.

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<sup>5</sup> Infometrics (2011) provides evidence by referring to Sassen, S. (1991), *The Global City*, Princeton: Princeton University Press, and Daniels, P. (1995), *The EU internal market programme and the spatial development of producer services in Great Britain*, *European Urban and Regional Studies* 2, 299-316.

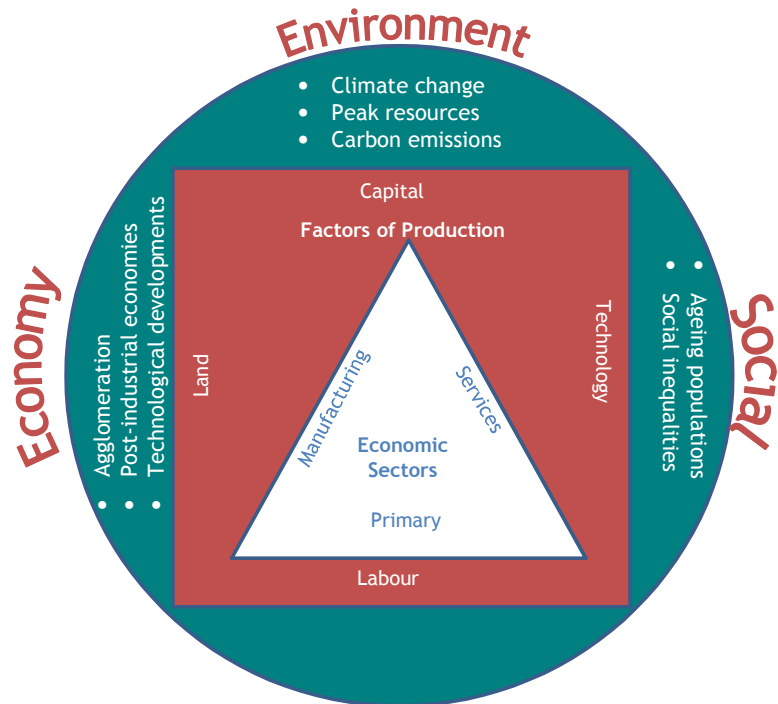
<sup>6</sup> UN (2011).

<sup>7</sup> MSD (2010).

## Summary of trend impacts

Figure 3 provides an overview of what aspects of society could be impacted by these trends. While the trends are likely to have social, environmental or economic impacts, they will affect the economy through resources, labour, financial capital, plant and equipment, and human capital.

**Figure 3 Trend impacts**



Source: NZIER

## 3. Benefits of a low-carbon economy

Ideas like *low-carbon economies*, *clean-tech development*, and *green growth* have become increasingly popular over the last decade. These ideas have arisen in response to concerns about the likely impacts of climate change and the potential for resource bottlenecks, high prices in major commodities such as oil, and reduced productivity of biological systems.

Low-carbon economies focus on using non-renewable resources efficiently, and minimising the amount of carbon they emit. Clean technology is new products or systems that allow us to use these non-renewable resources more efficiently. ‘Green’ economic development has become a catchall for these ideas, and encompasses a wider range of natural asset and ecological issues than just carbon emissions and climate change. A green economy is defined by the United Nations Environment Programme (UNEP) as delivering “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”.<sup>8</sup>

### 3.1 Benefits

Perhaps the largest benefit of transitioning towards a green economy is lower greenhouse gas emissions. If global emissions are reduced enough, then the most dramatic impacts from climate change could be avoided. Scientists and others are concerned that unmanaged climate change could damage ecosystems and cause mass migration of hundreds of millions of people to higher latitude locations.<sup>9</sup> These are costs that could be avoided if global warming and climate change are reduced.

A common misconception is that environmental protection and economic growth are incompatible. Recent work by the UNEP and OECD as well as leading environment economists and business strategy academics suggest that economic benefits can be obtained by focusing on green economic development.<sup>10</sup>

To lower its level of emissions, an economy will need to use less of the resources that emit greenhouse gases. Economies need to use less oil, gas, and coal. Reductions can occur by shrinking production and therefore the economy, or by developing new technologies that use less resources but allow the same or greater levels of production.<sup>11</sup> The development of these new technologies is the source of

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<sup>8</sup> UNEP (2011), p16.

<sup>9</sup> Romani, Stern, and Zenghelis (2011).

<sup>10</sup> UNEP (2011), OECD (2011), Romani, Stern, and Zenghelis (2011), McNeil (2009), and Nidumolu et al (2009).

<sup>11</sup> The development of clean technology is well underway. The businesses associated with Kāpiti’s Clean Technology Centre are examples of New Zealand-based organisations. McNeil (2009) and Nidumolu et al (2009) provide numerous examples from the rest of the world. Examples include Procter and Gamble’s development of a cold water clothes washing detergent, and General Electric’s “Ecomagination” programme that is developing amongst other things, solar energy, hybrid locomotives, fuel cells and lower-emission aircraft engines. McNeil (2009) states that the

much of the economic gains from green economic development. The innovation contributes to growth through three main channels:

- productivity growth and cost savings
- new product markets
- new jobs.

### Productivity growth and cost savings

Productivity growth happens when resources are used more efficiently, when the ratio of outputs to inputs increases. In simple terms, more can be produced for the same level of inputs. All technological development is focused on creating greater value with fewer inputs.

Clean-tech development specifically focuses on technologies that reduce energy requirements, the amount of wastage in a production process, and the level of emissions from production. The first two impacts reduce the amount of inputs required to make the same level of output, which grows productivity. Fewer inputs also lowers the production costs for firms, and increases profits.

This type of benefit will become more pronounced as the global levels of non-renewable resources dwindle. Oil provides a good example: as it becomes scarcer its price is expected to rise; price volatility is also expected to increase. Firms that use clean-tech to lower their use of oil will have several impacts. First, by using less oil firms will be less exposed to price increases and fluctuations. Secondly, by not using as much oil, the global supply will last longer. Thirdly, reducing oil use will reduce carbon emissions into the atmosphere. These firms will be more resilient to price shocks and will promote a more environmentally sustainable economy.

The benefits from fewer inputs and lower costs can be expected to occur regardless of whether global climate change policies are enacted or not. Climate change policies that put a price on carbon and other greenhouse gas emissions would increase the benefits from clean-tech development. This is because it provides firms with a clear financial incentive to reduce their emissions. Firms that reduce emissions would avoid the higher costs of paying for carbon emissions, which would further decrease input costs.

Productivity gains do, however, mean that the scale of emissions reductions benefits are at risk from what are known as 'rebound effects'. Clean-tech developments, as described above, reduce the amount of energy needed for a given amount of production. By reducing the amount of an input, the cost of that input decreases. With a lower cost of inputs, production can increase. The rebound effect is the increase in production of the goods that use the energy-reducing technology. In the case of energy use, this creates a risk of energy use actually increasing to levels higher than

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Ecomagination programme includes 70 products which were expected to generate USD25 billion in sales by 2010.

before the innovation.<sup>12</sup> Without large-scale changes in energy systems, that will mean increased greenhouse gas emissions.

### New product markets

As more countries begin to transition towards a green economy approach, the demand for new technologies that can tackle climate change will increase. This demand provides opportunities for businesses to develop and commercialise new technologies. It also means that key institutional and infrastructural aspects of the economy, such as energy and transport and planning systems, need to be configured with a view to connecting with and adapting to new technologies, knowledge and products created in other markets.

The expected scale of these new international markets is significant. The World Business Council for Sustainable Development suggests potential commercial opportunities of between USD2.1 trillion and USD6.3 trillion by 2050 related to environmental sustainability in natural resource sectors alone.<sup>13</sup>

Due to New Zealand's economic size, its consumer market for clean-tech is likely to account for a slight share of the global market. This suggests that large gains could be made by internationalising any New Zealand based clean-tech development, and by readily applying the overseas developments.

## 3.2 Risks

Some sectors of the economy may face heightened commercial risks within a green economy. At risk sectors are likely to be those that are dependent on non-renewable resources, are emissions intensive and face high uncertainty about the development of new technologies to reduce this dependence and intensity.

Without new technologies, and facing higher input costs and possibly a price on emissions, these sectors may be forced to reduce production, which could reduce output and employment in those sectors. The uncertainty in these sectors may also present a commercial opportunity for companies that are able to develop more energy efficient production techniques.

Increases in the cost of transport presents a key risk for rural districts. The effective distance of these regions from their markets and regional centres will increase. This will increase the cost of shipping products to market. In the absence of high-quality and reliable public transport options, it will also reduce the number of people that will be prepared to commute between the regional centre and rural districts. This will have flow on impacts for the rural districts, including declining land prices. The less that is done to prepare for or respond to these trends, the higher the risks will be.

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<sup>12</sup> UK Energy Research Centre (2007).

<sup>13</sup> Cited in OECD (2011).



### 3.3 Scale of the impact

The exact size of the economic impact from a focus on low-carbon initiatives, clean technology, and other aspects of green growth is hard to estimate. The benefits will arise from:

- more sales
- higher prices
- lower costs.

Each one of these elements has significant uncertainty associated with it, and are likely to be specific to industries or even firms.

Low-carbon initiatives and technology focus on avoiding damages from climate change and reliance on fossil fuels. Another way to consider the scale of the impact is to consider the damage avoided. That is, one possible future is business as usual, with a warmer climate and economic damages. Individuals and communities may pay to avoid these damages. The value of the avoided damage can be measured by an estimate of the willingness to pay to avoid it.

The Intergovernmental Panel on Climate Change (IPCC) suggests that climate change could produce a reduction in GDP by 2050 of at most 5.5 percent (Pachauri and Reisinger, 2007). This figure indicates three things. First, that the economic impacts are small, but not insignificant. Secondly, as a consequence, the efforts to reduce climate change will contribute to the economy, but will not contribute a large amount. Thirdly, the global effort to reduce climate change, considered over the world economy, may have a value many times New Zealand's whole GDP.

These figures put the Kāpiti Coast in an interesting position. As a percentage of the local economy, low-carbon business opportunities are likely to be relatively small. However, the world opportunities available to successful entrepreneurs working out of the Kāpiti Coast are enormous. How much the District actually benefits from low-carbon initiatives is likely to be somewhere between these extremes.

Council may have some special influence on low-carbon businesses in two ways. First, they can use the products and services of these companies, acting as crucial early adopters and product testers. Secondly, they can cultivate the reputation of the Kāpiti Coast as an environmentally aware, high value area. The reputational effects from the District may support any branding that individual companies do.

What is important for the Council is that profiting from these opportunities is very little different from other opportunities, from the perspective of businesses. They still need financial capital, plant and equipment, management, employees, and physical and telecommunications infrastructure. Policies that support business in general will also be good for supporting low-carbon businesses. In addition, policies that support the general reputation of the District as a good place to live, work and play will also support the branding efforts of individual businesses.

## 4. Kāpiti Coast's low-carbon future

Developed economies are trending toward lower carbon intensity, and political pressure is building for lower carbon emissions. The Kāpiti Coast is committed to a proactive approach, rather than reactive. That means planning for a low-carbon future.

This low-carbon vision is only part of a larger vision for the District. The community engagement documents describe many goals or priorities for the District. Residents have expressed preferences for low-density development, good transport linkages, good community resources, jobs for younger workers, and more. The Kāpiti Coast – its Council and residents – will need to decide how to manage the multiple priorities. There may be opportunities for synergies, such as clean-tech manufacturing creating jobs for young people, or reduced transportation encourages local retailing. There may also be trade-offs: for example, low-density development requires large roading networks and increased transportation in private vehicles.

In this section we discuss the implications for the local economy under two scenarios, one where transitioning to a low-carbon economy is the highest priority, and another where other priorities are also taken into account.

### 4.1 Future 1: Low carbon is the most important priority

The **services** sector tends to have a lower emissions intensity than manufacturing or primary production. Increasing the level of services exports will help the transition towards a low-carbon Kāpiti Coast economy. The economy would focus more on business services, design, arts, architecture, education and tourism. For example, the District Council could facilitate ecologically friendly tourism by expanding the 2009 pilot programme as discussed by the Hikurangi Foundation (2009). This type of tourism could link public transport from Wellington and other regions with bicycle and walking tours around the District. In addition, encouraging more local shopping would reduce retail leakage from the District, reducing carbon emissions from driving.

**Manufacturing** may have a role in a low-carbon economy. The Clean Technology Centre is focusing on technologies such as solar, biofuels, water purification and renewable power generation. The Council can continue to support the initiative by facilitating networks between the clean technology innovators and educational providers, skilled workers, and other firms with required expertise. The small size of the region will hamper efforts to create a critical mass around the Centre. The agglomeration effects (McCann, 2003; Porter, 1985) that help develop industry in large centres may be difficult to replicate.

**Agriculture** is also likely to contribute to the low-carbon economy. Horticulture and arable agriculture are well suited to a low-carbon economy, as they are less emissions intensive than animal-based systems. A number of reports have suggested the suitability of the District for horticultural production. The Kāpiti Coast will not be able to compete with the scale of other agricultural areas, such as the

Wairarapa or Canterbury. It does have the potential to create high-value boutique horticulture products. The District could also promote local food production in townships with backyard, community, and school gardens.

In all these sectors, focusing on **niche and high-value products** can support the low-carbon vision. Niche products are specialty products that command a premium price. Even with the same carbon footprint as mass-market equivalents, the higher prices mean they have higher value-add per unit of carbon. Targeting boutique or high end customers is one way to lower the carbon intensity of the economy, whether we are talking about services, manufacturing, or agriculture. Regional exports would need to be geared toward consumption patterns of higher income groups. Some examples are boutique hotels and restaurants, and niche tourism opportunities. However, this strategy requires good knowledge of the preferences of those consumers, and considerable management and marketing effort to build those markets.

Local communities would focus on **liveability** – ease of daily life for families with older children, commuting workers, and older people. Communities can focus on physical and virtual access: wide, flat footpaths, bicycle lanes, good community facilities, high-speed broadband. Liveability is part of a low-carbon future, because it can encourage:

- walking and biking over using automobiles
- local facilities over distant ones
- on-line communication and work arrangements over travel and commuting.

Liveability can also encompass **energy efficient designs for buildings**. New buildings can incorporate passive solar and other alternative energy approaches. The Council can link liveability with its promotion of manufacturing by using solar, water, and energy technologies from the Clean Technology Centre in new buildings.

**Transportation** is a significant source of carbon emissions. Reducing sprawl is important in reducing transportation. The Kāpiti Coast has a large percentage of commuters, which increase the carbon emissions from the local economy. To reduce carbon emissions from transport, development can promote compact urban areas around travel nodes. These nodes would provide efficient public transport to Wellington (and Palmerston North), and would include easy-to-use mode-switching facilities (parking lots, bike racks, covered waiting areas). For those who live and work locally, the District Council can advocate for easy alternative transport to business parks and retail areas.

## 4.2 Future 2: Balancing low carbon with other priorities

Where Future 1 focuses just on reducing carbon, Future 2 recognises that people and communities have additional priorities. Future 2 includes modifications to the scenario described above. In this section, we describe how other priorities might modify the Council's approach.

**To encourage 15-39 year-olds** to stay in the Kāpiti Coast, there need to be employment opportunities and things for them to do. On the employment front, there need to be more entry-level and mid-career jobs, and also a wider range of jobs. This may mean supporting larger employers and possibly manufacturing other than clean technology. To accommodate shift work, flexible schedules, and entertainment activities, the Council could encourage better transport links to Wellington.

**To maintain a semi-rural aspect**, there would be less focus on urban-density nodes around transport hubs. The Council would allow more sprawl, with related increase in impacts on water and transportation. This approach would also allow more lifestyle blocks, with the effect of less agricultural production. The impacts on carbon emissions could be reduced by increasing the use of parking lots and other mode-switching facilities at transport hubs, and by encouraging more local retail.

**To support an ageing population**, the region would provide more of the goods and services demanded by older people. This may mean new housing or housing modifications, and may fit with a plan for denser development and reduced dependency on automobiles. In addition, the Kāpiti Coast would need to ensure that affordable housing, retail, and other facilities are available for people who are providing health care services. These changes may fit with focus on providing jobs for younger adults and improvements to transportation.

**To support local agriculture**, providing links to local communities and fostering regional exports are important. Local agriculture is not necessarily less carbon intensive (Saunders, Barber, and Taylor, 2006), but may be valued in its own right. Encouraging links to the local community could follow the strategy outlined by Landcare Research. Some specific possibilities are promoting a regional brand for food products; encouraging farmers' markets, perhaps with a permanent covered space (on the model of Davis, California); or even opening a regional food pavilion (similar to Pike Place Market, Seattle). Another possibility is to investigate barriers to increased value-add from local producers. If local producers lack coldstores or commercial-grade kitchens, then the District may be able to coordinate a central facility for hire.

**To encourage local employment**, it is particularly important to focus on the service sector, which is the largest employer in the District. Tourism is likely to provide opportunities but will require the development of more attractions and supporting services, such as restaurants and accommodation. Encouraging local retail could bring increased income and jobs into the District, while reducing emissions from transportation. Growing business services in the District is also realistic. Existing commuters to Wellington are likely to work in this sector. Surveying these Kāpiti residents about the work they do and the perceived barriers to working in Kāpiti could be a useful first step. The outcomes of the survey could be used to develop a green business park where commuters are encouraged to establish 'satellite offices'. Strengthening the frequency of public transport links to Wellington could encourage these workers to commute for specific meetings instead of for full days or entire weeks.

What becomes clear in thinking about these issues is that the residents of the Kāpiti Coast and the District Council need to consider how these priorities interact. A low-carbon economy entails some significant changes, and those changes may either support other goals, visions, and preferences, or create tensions. Two things that are positive across all these scenarios are:

- improving transportation linkages, which can reduce carbon emissions, increase the population of younger adults, and improve liveability for an ageing population
- planning for the preferences and requirements of an older population, which can improve liveability, and provide local employment.

Some of the other activities, such as promoting horticulture or manufacturing, may have positives and negatives for regional production and carbon emissions.

### 4.3 Some steps to take:

Council is working to support a low-carbon future. Specific actions that can be continued or developed further are:

- Determine what a lower-carbon transport network, consistent with the population and vision of the Kāpiti Coast, could look like. Work with central government to ensure consistency between national and local visions and to promote local transportation priorities
- Work with local horticulturalists to determine how the District Council can support them. Some ideas are: regional branding initiative, farmers' markets, regional food pavilion, regional food event, development of a light processing facility
- Develop a clear strategy for clean technology manufacturing, with links to tertiary education, engineering firms, design capabilities, to overcome the relative isolation of Otāki and substitute for agglomeration effects
- Conduct research on commuters to develop strategies for encouraging public transport, reducing commuting, and encouraging businesses to relocate to the District. This research would have implications beyond the Kāpiti Coast, and may be eligible for partial funding from central government.

In our review of documents and discussions with Council and others, we found that much of this work was already underway; for example, Greenchip is preparing work on how to grow the Clean Technology Centre. Our assessment suggests that this is useful work for working towards a low-carbon economy.

### 4.4 Future scenario analysis

Predicting the future always entails great uncertainty. To inform Council's decision making process, we have provided four scenarios which included indicative analysis of potential impacts of different futures. We have estimated the impacts on the local economy in about ten years, in 2021. Each scenario includes three sets of figures:

- GDP impacts – the annual size of the increased contribution of the industry to the local economy

- employment impacts – the increased number of people working in the industry, in full-time equivalents
- probabilities – the likelihood of achieving impacts of this size.

### Important aspects of this analysis

There are several things to note about the figures provided:

- These scenarios are about aspirations, especially the high-value scenarios; they suggest what the Kāpiti Coast could achieve if the industries and their businesses are able to develop
- Implicitly, the analysis is about relative success of the industries, about comparisons across the scenarios, rather than absolute numbers
- As a result, the analysis is also intended to contribute to strategic and policy discussions; they are not financial estimates
- We have focused only on direct impacts of the industries; given the size of impacts and relative openness of the Kāpiti Coast regional economy, displacement or crowding out is not likely to be a factor within the region
- Each scenario includes high, medium, and low impacts, with associated probabilities
- The probabilities reflect our assessment of the riskiness of strategies and the likelihood they will succeed, given the trends discussed above. We have included the number used in the calculations, so that readers may make their own assessments.

These expected outcomes are presented in Table 1.

**Table 1 Expected outcomes of scenarios, 2021**

Scenario and impact	Annual GDP impact (\$m)	Employment impact (jobs)
Clean technology	10.3	87.5
Business services	40.8	177
Tourism	27.4	710
Retirement services	16.8	190

Source: NZIER

#### 4.4.1 Scenario 1: Clean technology manufacturing

This scenario assumes that clean technology design and manufacturing is successful in the District, based on the work at the Clean Technology Centre Park in Otāki. This scenario fits with the drive in the Kāpiti Coast for more ecologically friendly products, and with a focus on promoting local employment.

As noted in documents available on the Clean Technology Centre website, the park's vision is to create a business of 350 jobs and export revenue of \$750 million.<sup>14</sup> According to Steven Finlay, quoted in the Kāpiti Observer, Grow Wellington has these goals 'over 10 years' (Chipp, 2011). We calculate the potential contribution of the Clean Technology Centre by using the value-add per employee as reported in BERL (2010) and shown in Table 10 (page 38). Because these are goals over ten years, we have assumed that the Centre has a 100 percent growth rate per year, so that the estimate of annual impacts in 2021 is 175 jobs and \$375 million in export revenue.

Based on the information from the Clean Technology Centre Park, we consider the following range of outcomes:

- *high impact*: the Clean Technology Centre Park is successful as planned, with more businesses coming into the park and the site being further developed. Links with polytechnics and universities, as well with other businesses, go forward as planned. As a result, manufacturing and allied businesses increase in the Kāpiti Coast. We will base our analysis on projections by Clean Technology Centre and similar experiences of other cluster developments
- *medium impact*: the Clean Technology Centre is 50 percent as successful as envisioned, representing a slower build-up of the site and less interest than forecast
- *low impact*: the Clean Technology Centre is 25 percent as successful as envisioned, representing some uptake but low interest amongst firms outside the District.

The results of our analysis are reported in Table 2. The potential impacts of the Clean Technology Centre range from \$5.2 million to \$20.6 million in additional GDP per year, and between 44 and 175 total new jobs. The probability of achieving these different levels of impact is unknown. The Centre is very nearly creating a new local industry from scratch. In addition, manufacturing is in decline in the district and across New Zealand. We have assigned a lower probability of achieving the full impacts, and higher probabilities to smaller impacts. Based on the listed probabilities of outcomes, we calculated the expected value of the Clean Technology Centre to be a GDP increase of \$10.3 million per year and 87.5 new jobs.

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<sup>14</sup> Brochure available at: <http://www.ctcpark.co.nz/storage/captured-data/Bussiness%20park%20folder.pdf>.



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**Table 2 Potential clean-tech outcomes, 2021**

Scenario and impact	Probability	Annual GDP impact	Employment impact
		(\$m)	(jobs)
High	20%	20.6	175
Medium	40%	10.3	87.5
Low	40%	5.2	44
<b>Expected value</b>		<b>10.3</b>	<b>87.5</b>

Source: NZIER

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#### 4.4.2 Scenario 2: Business services

This scenario assumes that business services becomes a growth sector for the District. Better transport links because of road and rail improvements and the Paraparaumu Airport entice more business services and professional firms to locate in and around Paraparaumu and Waikanae. We have developed this scenario because it fits with the idea of low-carbon-intensity economic activities that provide local employment, while reducing transportation outside the District. The scenario fits with the economic goal of making the District a good place to live, work, and play. It also fits with international trends towards service-oriented, post-industrial economies that take advantage of developments in information technology.

BERL (2010) shows that business services contributed 38 percent of Kāpiti Coast's GDP in 2009. This is lower than the 45 percent contribution that business services made to the Wellington region's economy in 2008 (Grow Wellington, 2009). As Wellington is the capital city, its business services sector is likely to make a relatively smaller contribution to its GDP than other commercial centres. This suggests that an attainable goal for Kāpiti Coast's business services sector could be to increase its relative contribution to GDP from 38 percent to 45 percent to match the sector's contribution to the rest of Wellington. The outcomes considered assume that the number of business services jobs will increase in line with the growth in GDP contribution.

Based on this information we consider the following range of outcomes:

- *high impact*: the site around the Paraparaumu Airport is fully developed as a business park, and other areas are also developed. We estimate the impact by assuming that the District has the same proportion of business and professional services as Wellington City, with the associated boost to GDP and employment
- *medium impact*: the growth in business services is 50 percent as large as the high impact level
- *low impact*: the growth in business services is 25 percent as large as the high impact level.



The results from our analysis are presented in Table 3. Continuing to develop the business services sector in the Kāpiti Coast economy could increase GDP by between \$19.9 million and \$79.7 million. This increase in Kāpiti Coast's GDP would be matched by between 94 and 375 additional jobs. While there is a lower likelihood of achieving the highest level of impacts, the increased connectivity suggests that additional growth could be fostered. Based on the relative probabilities provided, we consider the likely impact of developing business services in the Kāpiti Coast to add \$44.9 million to GDP and create 211 jobs. These are expected to be high-value-add jobs, at \$212,500 per FTE.

**Table 3 Potential business services outcomes, 2021**

Scenario and impact	Probability	Annual GDP impact	Employment impact
		(\$m)	(jobs)
High	25%	79.7	375
Medium	50%	39.9	187
Low	25%	19.9	94
<b>Expected value</b>		<b>44.9</b>	<b>211</b>

Source: NZIER

#### 4.4.3 Scenario 3: Tourism

At \$82.70, Statistics from the Tourism Strategy Group suggest that the Kāpiti Coast and Horowhenua Districts have one of the lowest levels of expenditure per tourist visit in the country.<sup>15</sup> Continuing to develop the tourism sector in the Kāpiti Coast through eco-tourism and opportunities to increase the number of over-night visitors could help to increase this level of expenditure to the national average.<sup>16</sup> This scenario fits with low-carbon priorities and employment opportunities for younger workers. Depending on how the services are marketed, they can also fit with high-value niche marketing to ecologically aware consumers.

Based on this information we consider the following range of impacts:

- *high impact*: Council increases visitor expenditure to the national average by focusing on high-value tourism and increasing over-night visitors
- *medium impact*: visitor nights increase by 50 percent of the difference to the national average
- *low impact*: the growth in tourism is 25 percent of the high-growth scenario.

<sup>15</sup> More information available at <http://subscribe.tourismresearch.govt.nz/handlers/tm/?k=242,127290,33>.

<sup>16</sup> Nature-based tourists are estimated to spend 14 percent more than other international tourists. Coleman, J. (2009), Eco-Tourism conference 2009, <http://www.beehive.govt.nz/speech/eco-tourism-conference-2009>.

Statistics New Zealand's Tourism Satellite Account reports that tourism contributed 8.7 percent of New Zealand's GDP in the year to March 2010. These range of outcomes assume that meeting the level of national expenditure per tourist visit will increase the contribution of tourism to the Kāpiti Coast GDP to 8.7 percent.

Based on the level of employment reported in the Tourism Satellite Account, and the level of expenditure reported by the Tourism Strategy Group we calculate the level of expenditure per employee in the tourism industry. We use this to determine the number of potential jobs created from the increased tourism expenditure in the region.

The results from our analysis are presented in Table 4. By developing high-value tourism opportunities, the Kāpiti Coast's GDP could be increased by between \$12.2 million and \$48.7 million, with additional jobs of between 316 and 1,262 jobs. Tourism is a strong industry in New Zealand, which increases the likelihood of success. Based on the relative probabilities in the table, the likely impact of increased tourism would be an additional \$27.4 million GDP and 710 new jobs. Note, however, that the figures imply a low value-add per job: just \$39,000.

**Table 4 Potential tourism outcomes, 2021**

Scenario and impact	Probability	Annual GDP impact	Employment impact
		(\$m)	(jobs)
High	25%	48.7	1,262
Medium	50%	24.4	631
Low	25%	12.2	316
<b>Expected value</b>		<b>27.4</b>	<b>710</b>

Source: NZIER

#### 4.4.4 Scenario 4: Retirement services

As discussed in the above, the number of retired people residing in the Kāpiti Coast is expected to drive the District's population growth over the next twenty years. The District has the opportunity to shift its economy towards providing retirement services. This may attract more retired people than currently forecast. This scenario fits the trends toward older populations and service-oriented economies, and meets the Council's objective of making the area a good place to live.

Targeting economic growth towards people 65 and over can have two impacts. One impact is simply that the economy produces more of those goods and services demanded by this age cohort. By increasing the region's attractiveness to people 65+, Council can grow that segment of the population. With a larger population, the regional GDP will be higher. Employment will also rise to match the increased demand. The region may also enter a virtuous cycle, in which increased presence of

older people leads more businesses to cater for them, which makes the region more attractive for them and leads more older people to settle in the region.

A second potential impact is increased productivity amongst these firms. This effect can result from agglomeration: related firms concentrated in a specific area can lead to higher-than-average growth rates. Some of the reasons for the higher growth rates are shared suppliers, better labour markets in the specific industries, and more opportunities for learning from the experiences of other businesses (Combes, et al., 2009). The extent of the productivity improvement varies by location, size of population, industry, and other factors. As a rough estimate, agglomeration can lead to a 10 percent improvement in the affected industries (Combes, et al., 2009).

Based on this information we consider the following range of impacts:

- *high impact*: the population over 65 years of age grows by 25 percent more than the expected baseline, reflecting policies designed to attract older New Zealanders, and the concentration of older consumers creates a cluster for businesses catering to that demographic
- *medium impact*: the older population cohort grows by 25 percent more than the baseline, but without any additional clustering or agglomeration impacts
- *low impact*: the growth in this sector is 12.5 percent more than the baseline, without any additional clustering or agglomeration impacts.

For our analysis, we have split the population into two groups, those aged over 65, and the remainder. We have assumed that any growth in the younger than 65 population will cause the same economic growth for the District. That is, if the younger-than-65 population increases the total Kāpiti Coast population by 10 percent, then the Kāpiti Coast GDP will increase by 10 percent.

The relationship between GDP growth and the growth of over 65 year old population is more complex. The complexity can be broken down as follows:

- *consumption*: this age group has lower incomes on average and is likely to consume less than the rest of the population. Davey (2009) estimated that a retired couple spends \$698 per week, or about \$36,300 per annum. This figure is 72 percent of the average household expenditure, as reported in the 2007 Household Economic Survey. Treasury also conducted some relevant research (The Treasury, 2003). They considered 45-55 year-olds in 2003 (who will be 65 between 2013 and 2023) and estimated their retirement incomes. For couples, the median retirement income was \$39,000; for singles, it was \$21,053
- *government expenditure*: this age group is likely to account for more net government expenditure, due to lower taxation and higher health care costs. The exact difference will depend on the income and age distribution of residents, amongst other factors
- *retail and services leakages*: the amount of consumption and government expenditure is only part of the picture. It is unknown whether that economic activity will happen in the Kāpiti Coast or elsewhere. For example, total

consumption could be lower than for younger residents, but local spending could be the same.

The net effect is uncertain. Lower private consumption, higher consumption of government services, and unknown leakages make it complex to calculate the relationship between population increase and GDP impact. Therefore, we have chosen to assume that the GDP impact is equal to the change in population.

We have included agglomeration effects for the high impact outcomes only. We have incorporated these effects by assuming that the productivity of the economy related to the over 65 population increases by 10 percent. In 2021, 29 percent of the Kāpiti Coast population is estimated to be over 65. Increasing the productivity of this by 10 percent suggests that, in 2021, the Kāpiti Coast economy could be 2.9 percent larger due to the agglomeration effects from developing retirement services.

The results from our analysis are presented in Table 5. These results are based on the expected population change by 2021. By focusing on retirement services, the Kāpiti Coast's GDP could increase by between \$8.8 million and \$49.0 million, with between 100 and 556 additional jobs. Based on the relative probabilities in the table, the likely impact of additional retirements services would be an additional \$23.3 million GDP and 264 new jobs.

**Table 5 Potential retirement services outcomes**

Scenario and impact	Probability	GDP impact	Employment impact
		(\$m)	(jobs)
Retirement services			
High	25%	49.0	556
Medium	50%	17.6	200
Low	25%	8.8	100
<b>Expected value</b>		<b>23.3</b>	<b>264</b>

Source: NZIER

#### 4.4.5 Synergistic impacts

The four scenarios estimated above considered each industry in isolation. However, there are reasons to expect some synergies across the industries:

- infrastructure: getting infrastructure like transportation working more efficiently can affect all the industries discussed above. Tourists can more easily access the region and businesses can have more choices about where to locate
- amenity values: making the District a nicer place to live and work could benefit several sectors. The sectors most likely to benefit are tourism and retirement services; business services and clean technology are likely to have constraining factors other than amenity values

- policy settings: policies that make it easier to do business in the area are likely to affect all the sectors; retirement services and tourism may be less affected, as they also have important demand-side considerations.

Putting all this together, these four scenarios may have the following synergistic impacts:

- business services and clean technology: both of these scenarios are based on developing new business parks. Infrastructure and policies that benefit one will like benefit the other
- business services and ageing: more people 65 and over are expected to remain in the workforce, perhaps working part-time. Providing the necessary business facilities – communications, transportation, office space, etc. – and lifestyle amenities may encourage this age group to live and work in the Kāpiti Coast
- tourism and retirement services: these sectors are focused on leisure and enjoying amenity value of the area. They are likely to benefit from improvements to access, better coordination of transportation, improvements to public parks, and similar changes
- tourism and clean technology: one suggestion we heard was that the development of a clean technology industry could provide tourism opportunities. This may be possible, if the Clean Technology Centre or other groups develops an outreach component. The exact size of such an endeavour is difficult to determine.

The value of the synergistic impacts is likely to be close the combined values for the individual sectors. For example, policies that support business services and clean technology may produce economic impacts equal to the two sectors added together.

## 4.5 Summary

This section has described the future scenarios that could arrive in the District, and has quantified the potential economic impacts in value-add and employment. Because these are discussions about the future, they are tentative and uncertain. However, the trends identified above – environmental awareness, climate change, ageing population, service-oriented economies, resource constraints, and more – will affect the District. Economic development that takes advantage of the trends has a higher probability of success. Good policy, good strategy, and good implementation can produce economic growth several percentage points above the baseline and lead to hundreds more jobs in the District.

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# Appendix A Stocktake of the Kāpiti Coast District

## A.1 Geography

The Kāpiti Coast District is part of the Wellington region. It is located on the West Coast of the North Island, and lies north of Wellington City, between the Porirua City and Horowhenua territorial authorities. It has a geographic area of approximately 730 km<sup>2</sup>, which accounts for 3.0 percent of the Wellington Region, and 0.3 percent of New Zealand's geographical area.<sup>17</sup> The Kāpiti Coast District includes Kāpiti Island, a 19.7 km<sup>2</sup> island that is the site of Kāpiti Island Nature Reserve.

The Kāpiti Coast spans some 40 kilometres of coast line that stretches from Paekakariki to Ōtaki. Other towns within the District include Paraparaumu, Waikanae, Raumati South, Raumati Beach and Te Horo.

### Natural resources

The District has a climate with warm summers and cool winters, but is exposed to windy conditions because of disturbed weather patterns from the Cook Strait and Tasman Sea. The climate is particularly suitable to horticultural production.<sup>18</sup> While not particularly large in land area terms, the soils within the Kāpiti Coast are well suited to agriculture and horticulture.<sup>19</sup>

The District's water resources are sourced from a mixture of streams and rivers, aquifers, and rainfall. The water supply at Waikanae is under pressure, both in terms of quantity and quality. The Council has been investigating options to increase the supply of water in the District. The Council has two preferred options for additional water supply, a river recharge with groundwater and a dam at Maungakotukutuku. These options are expected to provide the District with a secure water source for the next 100 years.<sup>20</sup>

## A.2 Connectivity

The Kāpiti Coast is connected to other New Zealand districts via State Highway 1, which travels the length of the District. The North Island Main Trunk Railway, which passes through the Kāpiti Coast, carries passengers and freight the length of the North Island.

The Wellington Northern Corridor, one of the New Zealand Transport Agency's (NZTA) Roads of National Significance (RoNS), encompasses the length of the Kāpiti

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<sup>17</sup> Author's calculation based on Statistics New Zealand 2006 census data on population and living density.

<sup>18</sup> Mackay et al (2005), also MfE (2008).

<sup>19</sup> Landcare Research (2010).

<sup>20</sup> For more information see: <http://www.kapiticoast.govt.nz/Projects/Water-Supply-Project/>.

Coast. NZTA plans to upgrade this 110 kilometre stretch of highway. Most of the work is to be completed or nearing completion within 10 years.<sup>21</sup> This upgrade will strengthen Kāpiti Coast's road connectedness with Wellington.

Metlink, Greater Wellington's public transport network, connects the Kāpiti Coast to Wellington City via commuter trains (to Waikanae at the furthest), and buses. A daily train from Palmerston North to Wellington also stops at Ōtaki, Waikanae, and Paraparaumu.<sup>22</sup>

The Kāpiti Coast airport is undergoing development. Daily flights between Paraparaumu and Nelson or Blenheim. Air New Zealand is operating a new service between Auckland and Paraparaumu 18 times a week, beginning on 24 October 2011.<sup>23</sup>

The Kāpiti Coast is listed as receiving Ultra-Fast Broadband (UFB) by 2019, under the Chorus' UFB roll-out plan. Chorus does state that Paraparaumu has an existing business fibre network that could provide a dedicated fibre connection for businesses, so they do not have to wait for a UFB connection.<sup>24</sup>

### A.3 Population and demographics

At the 2006 Census, the Kāpiti Coast had a resident population of 46,200. Statistics New Zealand estimates that its population in 2011 is 50,600. Under its medium level projections the Kāpiti Coast's population is expected to grow at 1.0 percent per year until 2031, where its population will reach 60,900. This growth is expected to be driven by migration from other parts of New Zealand and from overseas. The natural population is forecast to fall over this time (deaths outweighing births). This suggests that the Kāpiti Coast is expected to attract migrants over the coming 20 years. A possible explanation for this high level of expected migration could be the existing level of rest homes and retirement villages already present in the District, which Statistics New Zealand takes into account when projecting District populations.<sup>25</sup>

As shown in Table 6, the Kāpiti Coast's growth rate is faster than Statistics New Zealand expects for the Wellington region, and New Zealand as a whole. This implies that, by 2031, the population of Kāpiti Coast will account for a greater share of the population of the Wellington region, and New Zealand.

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<sup>21</sup> More information available at: [<http://www.nzta.govt.nz/projects/wellington-northern-corridor/>].

<sup>22</sup> Metlink timetable information available at: [<http://www.metlink.org.nz/>].

<sup>23</sup> More information available at: [www.airnewzealand.co.nz](http://www.airnewzealand.co.nz), [www.air2there.com](http://www.air2there.com), and <http://www.kapiticoastairport.co.nz/index.html>

<sup>24</sup> More information available at: <http://www.chorus.co.nz/ch-ournetwork>.

<sup>25</sup> The estimates of migration within Statistics New Zealand's population projections take into account age-specific migration rates, the number of residential building consents, current and expected future developments in that region, historical levels of migration, and the types of non-private dwellings such as universities, prisons, hospitals, rest homes, and retirement villages. More information available at: <http://www2.stats.govt.nz/domino/external/omni/omni.nsf/outputs/Demographic+Projections#PA>.

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**Table 6 Growing population**

	<u>2006</u>	<u>2011</u>	<u>2031</u>	<u>Annual average growth rate</u>
Population	46,200	50,600	60,900	1.0%
Share of Wellington region	1.3%	10.3%	10.6%	0.6%
Share of New Zealand	1.1%	1.1%	1.2%	0.8%

Source: Statistics New Zealand medium population projection

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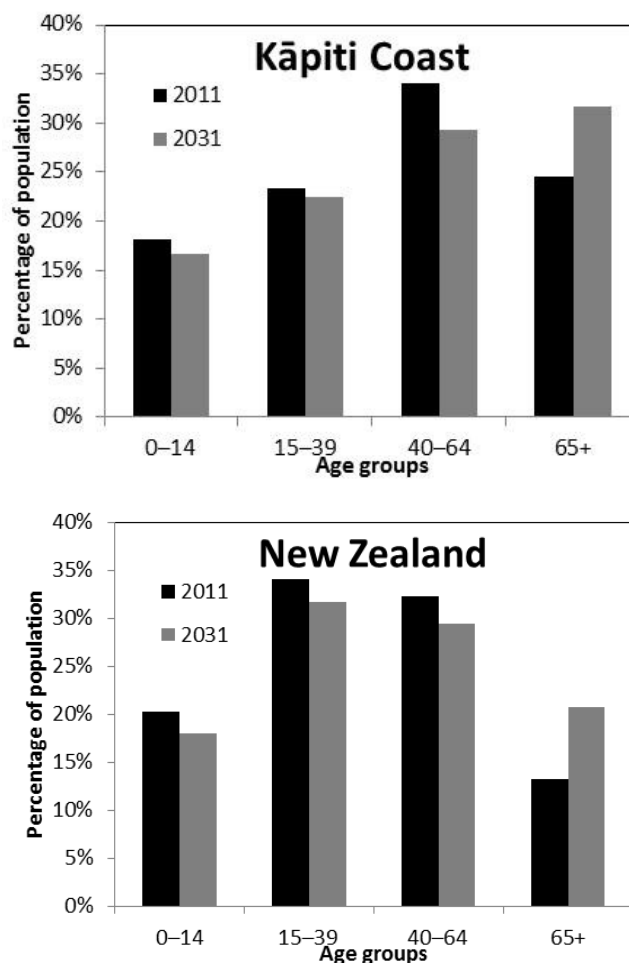
Figure 4 compares the age profile of the Kāpiti Coast's population with the profile of New Zealand in general. It provides distributions for the estimated populations in 2011 and in 2031. We can see from Figure 2 that, in 2011, people in the 15-39 age group are under-represented in the Kāpiti Coast, when compared to New Zealand. Also, the people in the 65+ age group are over-represented in the Kāpiti Coast.

Between 2011 and 2031, the differences between Kāpiti Coast and all of New Zealand are expected to widen. The 65+ age group is expected to become the largest population group in the Kāpiti Coast, while the share of population of working age is expected to fall. This growth in the 65+ age group reflects the assumptions made by Statistics New Zealand about retirement migration.

The 65+ age group accounts for a significantly larger share of population in the Kāpiti Coast than for New Zealand as a whole. From an economic point of view, this suggests that the Kāpiti Coast will continue to have a strong demand for services associated with retirement and ageing. The declining share of working age groups suggests that the District may have difficulty in sourcing the required labour to provide these services. A possible outcome is that the District's economy could focus on providing retirement related services and move away from other aspects of the economy. This type of shifting focus will mean that the District's economy is more centred around the preferences of older people.

**Figure 4 Kāpiti Coast's ageing population**

Percentage of total population



Source: NZIER, Statistics New Zealand

## A.4 Economy and recent performance

Statistics New Zealand does not publish statistics on the size and performance of the Kāpiti Coast economy. Regional and district GDP figures can be estimated by distributing the contribution of major industries at the national level to regions based on regional employment levels in those industry. This type of approach assumes that the production method for an industry is the same across the country, and does not allow for differences between regions. This means that regions with a more capital intensive production process will be treated the same as regions that rely more on labour.

With that caveat in mind, BERL (2010a) estimates the value add (a measure of GDP) of Kāpiti Coast District's economy to be \$1,080 million in 2009. It grew strongly between 1999 and 2009, with average growth of 3.1 percent, which was slightly greater than the growth in all of New Zealand. This is likely to be due to the growth in

the services industries in Kāpiti over that time. The key estimates from BERL are summarised in Table 7, and compared to New Zealand-wide statistics.

The growth in the Kāpiti Coast has been driven by an expanding services industry. Its contribution to Kāpiti Coast GDP has increased from 59 percent in 1999, to 87 percent in 2009. Retail trade, health care and social assistance, education, accommodation and food services, and construction are the largest sectors within Kāpiti Coast's services industry.

The primary sector increased slightly between 1999 and 2009, while the contribution of the manufacturing sector fell by \$18 million.

Table 7 shows that the Kāpiti Coast economy is more heavily skewed towards the services industries than the New Zealand economy as a whole.

**Table 7 Kāpiti Coast economic performance**

Value add, millions of 2009 dollars

	1999	2009	1999-2009 difference	1999 – 2009 growth (%)	1999 – 2009 growth (% pa)
<b>Kāpiti Coast</b>					
Primary sector	46	48	2	4.3%	0.4%
Manufacturing	111	93	-8	-16.2%	-1.8%
Services	635	938	303	477%	4.0%
<b>Kāpiti Coast total</b>	<b>793</b>	<b>1,080</b>	<b>287</b>	<b>36.2%</b>	<b>3.1%</b>
<b>New Zealand</b>					
Primary sector	10,64	13,36	2,701	25.4%	2.3%
Manufacturing	29,193	34,737	5,544	19.0%	1.8%
Services	87,923	125,025	37,102	42.2%	3.6%
<b>New Zealand total</b>	<b>12750</b>	<b>18,196</b>	<b>45,446</b>	<b>34.2%</b>	<b>3.0%</b>

Source: Statistics New Zealand, BERL (2010a)

As shown in Table 8, 88 percent of businesses in the Kāpiti Coast are based in the services industry, 7 percent are in the primary sector, and the remaining 5 percent are manufacturing based.

The strong economic growth over the last ten years has been matched by an expansion in the number of businesses operating in the Kāpiti Coast. Between 2001 and 2010, the number of businesses operating in the district increased by 26.3 percent, with most of the growth being driven by new services businesses specifically in the health care, construction, and accommodation sectors.

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**Table 8 Business units in the Kāpiti Coast District**

Number of businesses

	2001	2010	2001-2010 growth (actual)	2001-2010 growth (%)	Share of Kāpiti businesses	Share of sector businesses in Wellington region	Share of sector businesses in NZ
Primary sector	84	341	-143	-29.5%	7.1%	12.9%	0.4%
Manufacturing	206	224	18	8.7%	4.7%	12.5%	1.0%
Services	3,112	4,237	1,125	36.2%	88.2%	9.0	1.0%
Total	3,802	4,802	1,000	26.3%	100.0%	9.3%	0.9%

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Source: NZIER, Statistics New Zealand business demographics statistics

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The number of businesses operating in the primary sector decreased between 2001 and 2010. This slight growth in value-add in the primary sector, as shown in Table 7, suggests that this fall in business numbers could be due to consolidation or rationalisation – businesses finding the right size at which to operate or shutting down.

Table 9 shows that in 2010, the services industry employed 90 percent of the wage and salary earners that work in the District, the primary sector employed 3 percent, and the manufacturing sector employed the rest.<sup>26</sup>

Since 2001, the number of employees in the Kāpiti Coast District has increased by a quarter. As with the estimated economic and business growth, this increased employment has occurred in the services industry. Employment in the manufacturing sector has not changed, and employment in the primary sector has fallen since 2001.

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**Table 9 Employment in the Kāpiti Coast District**

Number of employees

	2001	2010	2001-2010 growth (actual)	2001-2010 growth (%)	Share of Kāpiti businesses	Share of sector businesses in Wellington region	Share of sector businesses in NZ
Primary sector	435	332	-103	-23.7%	2.8%	9.7%	0.3%
Manufacturing	800	800	0	0.0%	6.8%	6.0%	0.4%
Services	8,210	10,690	2,480	30.2%	90.4%	4.9%	0.7%
Total	9,445	11,822	2,377	25.2%	100.0%	5.0%	0.6%

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Source: NZIER, Statistics New Zealand business demographics statistics

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<sup>26</sup> These figures cover the employees that work in the Kāpiti Coast District; it will not include those that reside in the District, but commute for work.

Combining the number of employees in each sector with the estimates of contribution to GDP can yield an estimate of the value-add per employee, which can be a proxy for the level of labour productivity in each sector. This is presented in Table 10. Employees in the primary sector have the highest average value-add, followed by those employed in the manufacturing sector, and then the services sector. Due to the Kāpiti Coast economy's concentration in the service sector, the district wide average value-add per employee is closest to the services sector. These results are likely to vary across the occupations within these broad sectors.

**Table 10 Value add per employee in 2009**

2009 dollars

	Employees	Value-add(\$ millions)	Value-add per employee (\$)
Primary sector	319	48	150,470
Manufacturing	790	93	117,722
Services	10,780	938	87,013
Kāpiti Coast total	11,889	1,080	90,840

Source: NZIER, Statistics New Zealand business demographics statistics, BERL (2010a)

These employees are those that work in the Kāpiti Coast. The District's high level of transport connections makes it easy for residents to commute outside the region for work. As reported in Table 11, BERL (2010b) use 2006 census data to show that 30 percent of the Nature Coast workforce commute outside the region.<sup>27</sup> The figures were not broken down into residents of Kāpiti Coast or Horowhenua Districts. Most of these commuters work in the relatively close cities including Wellington, Palmerston North, Porirua, Lower Hutt, and Upper Hutt. While these workers earn their income outside the Kāpiti Coast District, it is likely that they will spend much of it within the District, contributing the District's economy.

<sup>27</sup> The Nature Coast incorporates Kāpiti Coast District and Horowhenua District.



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**Table 11 Nature Coast residents' work location**

Number of workers, 2006

Horowhenua District	10,362
Kāpiti Coast District	13,000
Porirua City	1,106
Upper Hutt City	210
Lower Hutt City	965
Wellington City	4,652
Palmerston North City	1,434
Manawatu District	163
Wairarapa Area	58
The Rest of New Zealand	1,437
Total	33,387

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Source: BERL (2010b)

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## A.5 Key sectors

### A.5.1 Agriculture

A recent report on the productive potential of the Greater Ōtaki noted that commercial agricultural production in that region of the Kāpiti Coast included:<sup>28</sup>

- olive plantations
- dairy farming
- chicken farming
- egg producers
- small levels of pig farming
- specialist bread producers
- jam producers.

Agriculture is not a large employer in the Kāpiti Coast District. As presented in Table 12, the number of agricultural employees in the District has fallen by a fifth between 2001 and 2010. Most of the employees work in horticultural industries, such as nursery and floriculture production, and fruit and tree nut growing. Pastoral activities, such as dairy cattle farming, are less prevalent.

The number of employees in fruit and tree nut growing and dairy cattle farming have grown strongly over the last ten years, but these businesses still remain relatively small employers in the Kāpiti Coast District.

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<sup>28</sup> Landcare Research (2010).

The District is host to over half of the Wellington region's nursery and floriculture production employees, and nearly a third of the region's fruit and tree nut growing jobs.

**Table 12 Agricultural employment in the Kāpiti Coast**

Number of employees

	2001	2010	2001-2010 growth (actual)	2001-2010 growth (%)	Share of Kāpiti employment	Share of sector employment in Wellington region	Share of sector employment in NZ
Nursery and floriculture production	110	100	-10	-9.1%	0.8%	52.6%	2.3%
Mushroom and vegetable growing	100	35	-65	-65.0%	0. %	8.9%	0.6%
Fruit and tree nut growing	75	90	15	20.0%	0.8%	32.1%	0.5%
Sheep, beef cattle and grain farming	15	15	0	0.0%	0.1%	2.0%	0.1%
Dairy cattle farming	35	55	20	57.1%	0.5%	9.4%	0.2%
Poultry farming	25	6	-19	-76.0%	0.1%	2.3%	0.3%
Deer farming	6	0	-6	100.0%	0.0%	0.0%	0.0%
Other livestock farming	3	12	9	300.0%	0.1%	5.1%	0.5%
Agriculture, forestry and fishing support services	30	6	-24	-80.0%	0.1%	1.1%	0.0%
Total	399	319	-80	-20.1%	2.7%	9.6%	0.3%

Source: NZIER, Statistics New Zealand business demographics statistics

In 2007 Kāpiti Coast used 23,252 hectares for agricultural production (Statistics New Zealand, 2007). As shown in Table 13, most of the agricultural land in the Kāpiti Coast is in grassland followed by plantation forest. Kāpiti Coast has a small amount of agricultural land when compared to the New Zealand's largest agricultural producing regions. Although it may be objected that the table compares the District with several regions, the point is that the Kāpiti Coast's agricultural resources are small.

Landcare Research (2010) discusses the role of land use in the District. It notes that due to the increasing prevalence of lifestyle blocks, the land parcel sizes are falling.<sup>29</sup> If this process continues, then agriculture, and particularly horticulture, on the Kāpiti Coast may struggle to compete with the scale in other regions.

<sup>29</sup> Landcare Research (2010), p. 42.

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**Table 13 Agricultural land use**

Hectares

	Kāpiti Coast	Waikato	Manawatu- Wanganui	Canterbury	Otago	New Zealand
Tussock and danthonia used for grazing	C	3,331	9,528	1,252,444	1 136,607	2,900,463
Grassland	13,385	1,140,847	1,112,444	1,252,564	855,702	8,086,160
Grain, seed and fodder crop land	C	18,134	15,964	193,653	53,191	367,404
Horticultural land	464	9,791	5,163	15,898	7,406	132,892
Plantations of exotic trees intended for harvest	4,071	281,845	119,210	98,148	120,611	1,708,282
Mature native bush	1,701	64,638	51,142	68,120	26,079	448,247
Native scrub and regenerating native bush	2,382	42,536	70,310	95,164	73,602	625,981
Other land	791	39,231	26,644	104,269	57,946	431,467
<b>Total Land</b>	<b>23,252</b>	<b>1,600,354</b>	<b>1,417,246</b>	<b>3,080,261</b>	<b>2,331,143</b>	<b>14,700,897</b>

Notes: (C) Data withheld by Statistics New Zealand

Source: Statistics New Zealand

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### Potential for development

Landcare Research (2010) identified the large majority of the soil in the Greater Ōtaki area as having potential for increased horticulture production. More specifically, it suggests that Ōtaki has potential to expand production of:

- olives
- berries
- flowers
- nurseries
- viticulture
- pipfruit.

To successfully expand these sectors, a number of barriers in the District need to be overcome. These barriers include:

- costs of entry - high land prices are being driven up by demand from dairy farmers and lifestyle property owners, and capital requirements are significant
- small size of the District – there is little possibility of efficiencies from economies of scale, so producers have higher costs relative to domestic and foreign competitors
- infrastructure – some horticulture products require pack houses to store fruit before transporting to market. This infrastructure is lacking in the District. As an example, Landcare Research (2010) note that the closest apple pack house is in the Hawke’s Bay.

The report concluded that, if these barriers could be overcome, the Kāpiti Coast could benefit from the development of horticulture in the District.

### A.5.2 Manufacturing

The manufacturing sector’s contribution to the Kāpiti Coast economy fell between 1999 and 2009, while the number of employees in the sector did not change between 2001 and 2010.

As shown in Table 14, food product manufacturing is the largest employer in the manufacturing sector, and the number of employees has grown significantly between 2001 and 2010. Food product manufacturing in the Kāpiti Coast accounts for 7.9 percent of food product manufacturing employees in the Wellington region, and 0.4 percent of employees in the nation-wide industry.

Other relatively large manufacturing employers in the District include non-metallic mineral product manufacturing, fabricated metal product manufacturing, machinery and equipment manufacturing, and wood product manufacturing. With the exception of wood product manufacturing, the number of employees in all of these sectors have increased between 2001 and 2010.

Non-metallic mineral product manufacturing (this category includes concrete and glass manufacturing) in the Kāpiti Coast accounts for nearly a quarter of all non-metallic mineral product manufacturing employees in the Wellington region, and 1.4 percent of employees in the nation-wide industry. These shares are greater than Kāpiti Coast’s share of regional and national population. This suggests that Kāpiti Coast may have a production hub for non-metallic mineral products.

**Table 14 Manufacturing employment in the Kāpiti Coast**

Number of employees

	2001	200	2001-2010 growth (actual)	2001- 2010 growth (%)	Share of Kāpiti employment	Share of sector employment in Wellington region	Share of sector employment in NZ
Food product manufacturing	190	250	60	31.6%	2.1%	7.9%	0.4
Beverage and tobacco product manufacturing	0	6	6	-	0.1%	4.0%	0.1%
Textile, leather, clothing and footwear manufacturing	75	45	-30	-40.0%	0.4%	3.6%	0.4%
Wood product manufacturing	75	60	-15	-20.0%	0.5%	6.1%	0.4%
Pulp, paper and converted paper product manufacturing	45	6	-39	-86.7%	0.1%	1.3%	0.1%
Printing	55	25	-30	-54.5%	0.2%	1.8%	0.3%
Basic chemical and chemical product manufacturing	50	25	-25	-50.0%	0.2%	6.5%	0.4%
Polymer product and rubber product manufacturing	35	45	10	28.6%	0.4%	4.3%	0.4%
Non-metallic mineral product manufacturing	70	100	30	42.9%	0.8%	23.7%	1.4%
Primary metal and metal product manufacturing	9	12	3	33.3%	0.1%	6.3%	0.3%
Fabricated metal product manufacturing	80	90	10	12.5%	0.8%	6.2%	0.4%
Transport equipment manufacturing	6	3	-3	-50.0%	0.0%	0.6%	0.0%
Machinery and equipment manufacturing	55	70	15	27.3%	0.6%	4.5%	0.3%
Furniture and other manufacturing	60	55	-5	-8.3%	0.5%	5.8%	0.6%
Total	800	800	0	0	6.8%	6.0%	0.4%

Source: NZIER, Statistics New Zealand business demographics statistics

### Clean Technology Park

The country's first purpose-built Clean Technology Centre opened in November 2010, in Ōtaki. The associated business park comprises approximately 42 parcels of land which is intended to form a cluster of businesses that are focused on researching and commercialising clean technology.

As the park continues to develop, and with on-going support from the Wellington region, it could lay the platform for professional design jobs, as well as high-value niche manufacturing. This will boost the performance of the services and manufacturing sectors and the wider Kāpiti Coast economy.

### A.5.3 Services

The services sector contributed 87 percent of Kāpiti Coast's estimated GDP in 2009 and 90 percent of the jobs in the District in 2010. As shown in Table 15, the largest employers in the Kāpiti Coast services sector are:

- retail trade
- health care and social assistance
- education and training
- accommodation and food services
- construction.

**Table 15 Services employment in the Kāpiti Coast**

Number of employees

	2001	2010	2001-2010 growth (actual)	2001-2010 growth (%)	Share of Kāpiti employment	Share of sector employment in Wellington region	Share of sector employment in NZ
Electricity, gas, water and waste services	50	9	40	80.0%	0.8%	5.0%	0.7%
Construction	800	1,200	440	55.0%	10.5	9.5%	1.1%
Wholesale trade	170	170	0	0.0%	1.4%	1.9%	0.2%
Retail trade	1,930	2,030	100	5.2%	17.2%	9.4%	1.0%
Accommodation and food services	820	1,300	480	58.5%	11.0%	8.2%	1.0%
Transport, postal and warehousing	220	290	70	31.8%	2.5%	3.2%	0.4%
Information media and telecommunications	140	260	120	85.7%	2.2%	3.4%	0.7%
Financial and insurance services	130	180	50	38.5%	1.5%	1.6%	0.3%
Rental, hiring and real estate services	240	190	-50	-20.8%	1.6%	7.5%	0.7%
Professional, scientific and technical services	380	550	170	44.7%	4.7%	2.2%	0.4%
Administrative and support services	180	190	10	5.6%	1.6%	1.5%	0.2%
Public administration and safety	260	370	110	42.3%	3.1%	1.2%	0.3%
Education and training	1,200	1,320	120	10.0%	11.2%	6.4%	0.8%
Health care and social assistance	1,070	1,830	760	71.0%	15.5%	7.7%	0.9%
Arts and recreation services	220	210	-10	-4.5%	1.8%	3.7%	0.6%
Other services	400	470	70	17.5%	4.0%	5.2%	0.7%
Total	8,210	10,690	2,480	30.2%	90.4%	4.9%	0.7%

Source: NZIER, Statistics New Zealand business demographics statistics

To provide some relative scale to these sectors, each of the five listed sectors has more employees than the primary and manufacturing sectors combined. Between 2001 and 2010, these five sectors increased their number of employees by 1,900.

Sectors that could be grouped together as business services contribute a further 1,100 employees in 2010.<sup>30</sup>

While tourism is not specifically recorded as an industry by Statistics New Zealand, it is likely that those employed in the accommodation and food services, arts and recreation services, and retail trade sectors form at least part of the Kāpiti Coast tourism sector.

## A.6 Summary of the stocktake

The Kāpiti Coast has strong natural resources. The district has good land and climate for agriculture, but has little scope to achieve economies of scale. The landscape has high amenity values. Its working-age population is skewed towards mid- to late-career workers, who tend to commute out of the district. It has a high proportion of people over 65 years of age. In summary, it is a semi-rural satellite of a larger urban area.

The economy is typical of a satellite region in a developed economy, other examples of similar satellite regions include the rural counties around Sacramento, California. The economy is mostly services. A large portion of services is targeted at local household consumption: retail service, food, and health care. Some services are commercial, such as financial and professional, as well as components of real estate, construction, and other sectors. Some services produce exports for the region, especially tourism (food and accommodation, rental services, education). Manufacturing is a small part of the economy and declining, which fits the overall trend in New Zealand. Agriculture is a relatively small part of the economy by New Zealand standards.

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<sup>30</sup> Financial and insurance services; rental, hiring and real estate services; professional, scientific and technical services; and administrative and support services.

## Appendix B Major economic trends

This section discusses the trends that are likely to have significant impacts on the global and New Zealand economies. Some of these trends are likely to clash with each other in the future, requiring difficult decisions for governments, businesses, and consumers.

### B.1 Shifting to low-carbon economies

With concerns about climate changes, economies are adjusting or planning to adjust to lower carbon emissions. One way to do this is to lower the carbon intensity of production – GDP per unit of carbon or greenhouse gases (GHG).

Anthropogenic GHGs are mainly produced by fossil fuels and animal farming. The fossil fuels (petroleum and coal) are used for transportation, industry, and electricity production. In animal farming, sheep and cows are the main sources of GHGs. Use of nitrogen fertilisers also contributes.

Low-carbon economies may reduce emissions from any of these sources. The most cost-effective reductions depend on the specific economy and technology. In New Zealand, most of the electricity is hydroelectric, so the on-going production of GHGs is relatively small. However, fuel for transport is quite important. From a carbon perspective, improving transport efficiency is important. The New Zealand agricultural sector is a significant source of GHGs. Research is under way to reduce emissions, but few mitigation technologies are showing much promise for reductions in the near future.<sup>31</sup>

Services tend to be less carbon intensive, producing relatively more GDP per unit of carbon. One exception to this general trend in New Zealand is tourism. Tourism tends to be a relatively high user of energy and therefore a large GHG producer relative to its economic contribution.<sup>32</sup>

### B.2 Climate change

Climate change is expected to have large impacts on the structure of global economies. Climate change will affect weather, our water and food resources, our ability to grow crops, and force us to use technology to keep our built environment comfortable. The rising sea levels will affect coastal and riverine areas, which may also affect our groundwater resources.

The potential global economic cost of climate change is expected to be significant. Stern (2006) states that formal modelling of unmitigated climate change with global warming of 5-6°C would reduce global GDP by an average of 5 percent to

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<sup>31</sup> Kaye-Blake et al (2009).

<sup>32</sup> In 2000, tourism accounted for 5.6 percent of energy demand in New Zealand, and its contribution to GDP was estimated to be 4.9 percent. Becken (2002).



10 percent. The impact on developing countries is expected to be greater than 10 percent.

Countries around the world have begun to implement policies to reduce greenhouse gas emissions. These policies provide economic incentives for users to reduce the level of their emissions. Economies are likely to change in response to these policies, as businesses and consumers try to mitigate or have to adapt to an emissions price. Technologies that reduce emissions intensities will be highly sought after.

The effects of climate change on New Zealand, and the Kāpiti Coast District in particular are expected to be mixed. The Ministry for the Environment notes that the temperatures in the Wellington region could be up to 3 degrees warmer by 2070. The western part of the region, including the Kāpiti Coast, could be up to 20 percent wetter by this date, with flooding becoming up to four times as common. The costs of repairing infrastructure such as damaged houses, roads, and bridges will increase. On the other hand, the conditions for crop growing could improve, with possibly faster growing crops or a longer growing season.<sup>33</sup>

### B.3 Resource constraints

The quality and availability of some resources are falling. Demand for finite resources like oil is continuing to grow on the back of economic growth in the developing world. This suggests that oil prices may continue to increase. High oil prices will have a significant impact on global economies, as it is integral for the production and consumption of many products. A high price will however, provide incentives to expand oil exploration, and for alternatives to be developed. As more alternatives are developed, and production and consumption adapts to them, the need for oil will fall. In reality though, widespread adoption of new technologies is likely to be slow, as changing systems throughout the world takes time. Technologies tend to rely on significant infrastructure, which takes time to be rebuilt for a new technology. Path dependency – later changes depending in key ways on prior developments – can also slow adaptation.

Existing behaviours in the management and use of New Zealand's water resources is also creating a constraint for the economy. Freshwater is a key strategic and productive asset of New Zealand. The quality and quantity of available water has been deteriorating in New Zealand. The Government's recent National Policy Statement (NPS) on Freshwater Management is intended to improve the management of water resources in New Zealand.<sup>34</sup> The NPS provides support to regional authorities to enable more efficient allocation of the water, and to simplify transfers of water entitlements. These steps can assist the sustainable use of New Zealand's water resources.

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<sup>33</sup> MfE (2008).

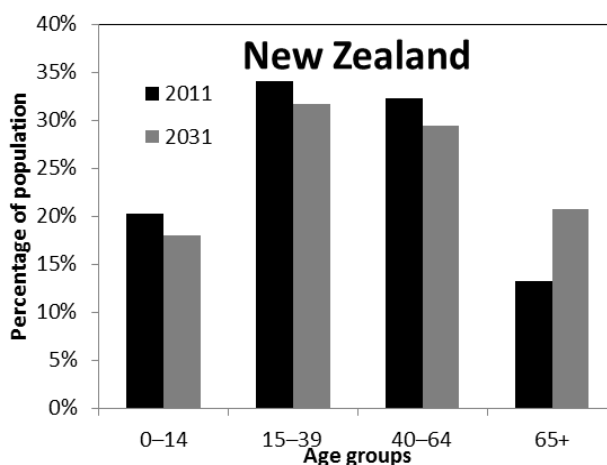
<sup>34</sup> MfE (2011) and Smith (2011).

## B.4 Ageing population

New Zealand's age profile is expected to get older over the next twenty years. As shown in Figure 5, under Statistics New Zealand's medium population projections, 20 percent of the population will be 65 and older in 2031. As a consequence, the proportion of people under 65 is expected to fall. This creates a higher dependency ratio, meaning that there are expected to be fewer people, per capita, producing market goods and services: fewer doctors, fewer road workers, fewer shop assistants, and fewer builders.

**Figure 5 New Zealand's ageing population**

Percentage of total population



Source: NZIER, Statistics New Zealand

These changing demographics are expected to have a number of impacts. First, there will be a change in consumption patterns towards the products and services that are associated with those 65 and older. Whether these are 'traditional' retirement products and services, or 'non-traditional' ones associated with the Baby Boomer generation, the consumption by this age group will affect the economy. Increased demand for these products will increase their price, and the returns to providers of these services.<sup>35</sup>

Secondly, the increased demand for Government services, such as health care, will create fiscal pressures, which will be further increased due to the higher dependency ratios.<sup>36</sup> This is because there will be less income tax available to fund Government expenditure. This fiscal pressures are likely to require trade-offs between different sections of the population, requiring difficult political decisions.

<sup>35</sup> Stephenson (2006).

<sup>36</sup> Stephenson (2006) cites a number of studies that review the effect of ageing populations on government spending associated with large expenditure items. These studies include Bryant (2003), Bryant et al., (2004); Creedy and Scobie (2002), and McCulloch and Frances (2001).

## B.5 Technological developments

Technological development is the most significant source of economic growth over time. It is the main driver of increases in per-capita productivity and living standards. The on-going investment in this area is likely to drive future growth. It is difficult, however, to pick which technologies are going to change the world. Infometrics (2011) note the uncertainty in this area but suggest four areas that may have implications for the New Zealand economy. They are:

- biotechnology
- improvements in information and communications technology (ICT)
- developments of non-fossil fuels
- nanotechnology.

These areas could lead to improvements across the economy, such as lower communications costs, productivity gains in agriculture and forestry, reductions in carbon emissions, and health outcomes.

The benefits of technological developments are not limited to the countries where they were developed. Due to New Zealand's size, it is likely that most technological developments that are applied in the country were developed overseas. Having the capability to apply the latest technologies from around the world will deliver significant benefits. To ensure this happens, the institutional settings in a country will play a large role in the successful application of new technologies, as discussed in UN Millennium Project (2005).

## B.6 Agglomeration

Agglomeration can create a virtuous cycle of productivity gains amongst firms in the same location. These firms are close to their competitors, customers and workers. The proximity of each group reduces transport costs from suppliers to customers, allows for the easy exchange of ideas and information, and increases the pool of labour available to firms.

As noted in Infometrics (2011), one driver of the recent global agglomeration trend towards large cities has been the falling cost of computing power. Computers are increasingly being used to complete routine tasks, which allows labour to focus on more complex tasks. People that work on these complex tasks are able to benefit by discussing and exchanging ideas with other. As a result, people group together and agglomeration benefits begin to accrue.

These benefits increase with the scale of the economic centre. Infometrics (2011) and McCann (2009) suggest that New Zealand will generate smaller agglomeration effects than can be produced overseas. This is particularly because our cities are competing with regional power-houses such as Sydney, Melbourne, or Singapore. This suggests that New Zealand may have difficulty in attracting business that specialise in non-routine products, or keeping high-skilled New Zealand workers.

## B.7 Post-industrial economies in developed countries

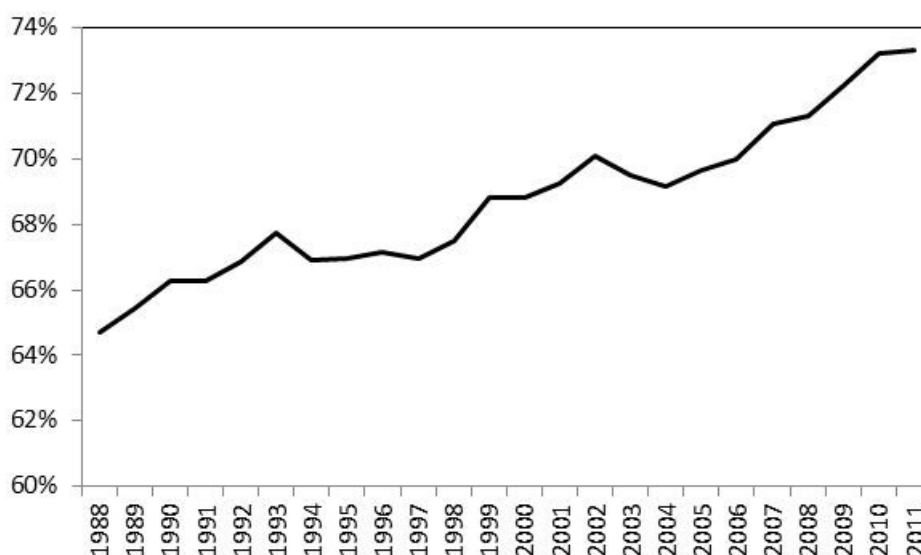
A long term trend in developed economies is the changing structure away from primary and manufacturing production towards services industries.<sup>37</sup> Figure 6 shows that this trend has also been occurring in New Zealand.

The shift of global manufacturing from developed countries to low-cost producers has allowed developed countries to develop sectors within the services industries. These sectors have included aspects of research and development, design, marketing, and other business services such as management consulting.

Along with this production trend, as the wealth of consumers has increased the share of their income that they spend on services has also increased. These types of services include health-care, tourism, restaurants, and household services. The service sector grows as a portion of the economy as consumers spend larger fractions of their incomes on its products.

**Figure 6: Growth of NZ services sector**

Share of GDP



Source: NZIER, Statistics New Zealand

## B.8 Increasing social inequalities

While the poverty related UN Millennium Development Goals are expected to be met by their deadline, the global financial crisis and current high food prices are slowing progress.<sup>38</sup> This suggests that the gap between the rich and poor is continuing to grow in many countries. This gap could continue to worsen, if as suggested by

<sup>37</sup> Infometrics (2011) provides evidence by referring to Sassen, S (1991), *The Global City*, Princeton: Princeton University Press, and Daniels, P (1995), *The EU internal market programme and the spatial development of producer services in Great Britain*, European Urban and Regional Studies 2, 299-316.

<sup>38</sup> UN (2011).

Stern (2006), the impacts of events such as climate change are felt more significantly by developing countries.

New Zealand's social indicators have generally improved slightly between 1995 and 2009.<sup>39</sup> New Zealand still has a 'long-tail' in terms of the distribution of outcomes across education, health, and income. This long-tail means that a larger proportion of New Zealanders will have a below average standard of living. However, recent research suggests that equality may help promote sustainable growth.<sup>40</sup> Increasing social inequalities may therefore be a concern for future economic performance in New Zealand.

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<sup>39</sup> MSD (2010).

<sup>40</sup> Berg, Andrew, and Jonathan D. Ostry. (2011). *Inequality and unsustainable growth: two sides of the same coin?* IMF Staff Discussion Note 11/08 (Washington: International Monetary Fund).