

13 UNDERSTANDING SOCIO-ECONOMIC OPPORTUNITIES

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13.4 INTRODUCTION

Other chapters of the report have described current biogeophysical and Mātauranga Māori information for restoring biodiversity, restoring sustainable fisheries, restoring the mauri, understanding climate change and status of integrated co-operative management frameworks. This chapter begins to address the holistic integrated approach taken by this project through addressing the current status of socio-economic conditions within the Kaipara Harbour catchment area – whom are the people living in the area? What do they do for work? What social opportunities do they have relevant to the natural resources/world of the Kaipara?

The prevailing paradigm for socio-economic opportunities is through sustainable development options. A policy adopted since the Brundtland Report, also known as *Our Common Future*, published in 1987¹. The key element of the policy was placed on ‘future generations’ – meeting human needs while preserving the environment, so that needs can be met, but the needs of future generations to come. Albeit, the Resource Management Act primary goal is “sustainable management” of resources. This is not the same thing as “sustainable development” van Roon & Knight (2004) discuss. When the RMA was developed it was never intended to encompass sustainable development goals. To successfully realise sustainable development goals, New Zealand needed an integrative, nationwide strategy (Parliamentary Commissioner for the Environment 2002). Action has been little at the national scale but regionally the idea has been embraced by communities and organisations (Auckland Regional Growth Forum 2007).

This chapter begins to explore what information exists on how sustainable development is supported, planned for and addresses the integration of the needs of future generations, with ecological processes, social and economic equity.

The social and economic demographics of the Kaipara is has been shaped by the past and there is a clear north-south split. The Kaipara currently, and historically, has been a resource-based economy. In the late 1800’s, the Kaipara serviced both international and domestic markets principally through the export of native timber and some of the first European settlements established have survived to be thriving primary production service centre’s to the wider rural community.

The influence of Auckland has seen a clear north-south split in socio-economic demographics. This position has been a major driver of change in the southern Kaipara, primarily through employment and labour force changes, telecommunications and increasing rural residential development. The Kaipara District in the north has one of the lowest population densities in the North Island and is expected to decrease 3% over the next 20 years. The Rodney District, in the south, positioned on the doorstep of Auckland metropolitan limit, has a population estimated at 89,559 for 2006 and is expected to increase

¹ WCED (World Commission on Environment and Development). 1987. *Our Common Future* (Oxford, Oxford University Press).

more than 50% in the next 20 years.² This trend exists across other demographic characteristics such as Māori, income and unemployment.

The Kaipara is a rural landscape therefore, the dominant economic activities include: agriculture (largely dairy farming); horticulture (mainly kumara), viticulture, sand mining and quarries. Emerging industries include aquaculture, organic produce, and tourism. Support sectors such as light engineering and construction are also important to the area.

Biogeophysical information relevant to understanding socio-economic opportunities was mainly sourced from publications that analysed the physical and geological resources of the Kaipara for development and economic opportunities. Such as:

- Ngāti Whatua Māori Sustainable Development Project. Land-based resources in the Ngāti Whatua Region (Forer et al 1999, FRST Funded).
- Ngāti Whatua Māori Sustainable Development Project. Marine based resources in the Ngāti Whatua Region (Brenda Hay 1999).
- Kaipara Sand Study Publications.
- Northland Oyster Aquaculture Review (Handley & Jeffs 2003).
- Opportunities for Sustainable Economic Development in the Kaipara Region (Wilson *et al.* 2006).

The biogeophysical resources of the Kaipara that shape socio-economic opportunities are extensively discussed in Chapters 9 (Protecting and Restoring Native Biodiversity) and Chapter 10 (Restoring Sustainable Use of Fish & Invertebrate Stocks).

The information sourced for this chapter pre-dates the global economic recession and credit crisis that occurred (and continues) in late 2008. Information sourced for chapter also did not predict the rapid increase in the concern for climate change impacts to the economy and environment. Considering these constraints gaps and opportunities are identified in light of the information collected and current economic situation.

One of the six long-term objectives of the IKHM project is to promote socio-economic opportunities within the World of Kaipara. The purpose of this chapter is to not debate and explore if the Kaipara socio-economic opportunities are sustainable or not, but to suggest some of the key barriers and opportunities that are founded on the four principles of the IKHM project: kaitiakitanga, ecosystem-based management, co-management and manaakitanga respect.

13.5 HISTORICAL SETTING

To understand the change that has occurred across the Kaipara catchment and harbour it is worth summarising the historical records. The Kaipara land and seascape has undergone significant change for over 200 years since European settlement occurred in the 1830s. The

² These are only projections based on trajectories taken from historical trends. This information does not necessarily imply that this is the cause of the difference in demographics.

scale of this change was considerably less during Māori occupation but they did alter the landscape through fire and clearing for Pā fortifications, gardens and cultivation areas, and kainga developments. Of particular note are:

Logging	<ul style="list-style-type: none"> • Byrne (1986) Riddle of the Kaipara • Byrne (2002) The Unknown Kaipara. Five Aspects of its History, 1250-1875 • Reed (1953) Story of the Kauri • Sale (1978) Quest for the Kauri • Stallworthy (1916) Early northern Wairoa
Shipping	<ul style="list-style-type: none"> • Byrne (1986, 2002) Riddle of the Kaipara • Byrne (2002) The Unknown Kaipara Five Aspects of its History, 1250-1875 • Ingram (1972) Shipwrecks of New Zealand • Ryburn (1999) Tall spars, gum and steamers • Stallworthy (1916). Early northern Wairoa. • Wright (1969). The rise and fall of the port of Kaipara.
Timber Mills	<ul style="list-style-type: none"> • Byrne (1986). Riddle of the Kaipara. • Byrne (2002). The Unknown Kaipara Five Aspects of its History, 1250-1875. • Stallworthy (1916). Early northern Wairoa.
Pastoral Farming (Sheep, Dairy, Bull)	<ul style="list-style-type: none"> • Fordyce (1993). From Kahikatea to Kumara on Ruawai Flats. • Bradley (1982). The Great Northern Wairoa. • Horn (1954). The Northern Wairoa.
Settler Life	<ul style="list-style-type: none"> • Barlow (1888). Experiences of a Kaipara Settler. • Bradley (1973). The Great Northern Wairoa. • Fletcher (1994). Helensville Heritage Study. • Grey (1962). The McLeods of Kaipara. • Sheffield (1963). Men came Voyaging. A history of Helensville. • Stallworthy (1916). Early northern Wairoa • Byrne (2002). The Unknown Kaipara Five Aspects of its History, 1250-1875.
Land Transactions & Development	<ul style="list-style-type: none"> • Waitangi Tribunal (2002). Wai 674 Kaipara Interim Report. • Waitangi Tribunal (2006). The Kaipara Report. • Stirling (1998). Ngāti Whatua Native Land Court, 1864-1900. • Small (1999). Socio-economic consequences of Land Loss for Ngāti Whatua of Southern Kaipara from 1900. • Thomas (1999). The Crown and Māori in the Northern Wairoa, 1840-1865. Vol. 1-5. • Stirling (1996). The Lands of Te Uri O Hau O Te Wahapū O Kaipara. Vol. 1. The Nineteenth Century. • Stirling (1996). The Lands of Te Uri O Hau O Te Wahapū O Kaipara. Vol 2. Pouto Lands: Control and Alienation in the Twentieth Century • Stirling (1996). The Lands of Te Uri O Hau O Te Wahapū O

	<p>Kaipara. Vol 3. Pouto No. 2. Twentieth Century Block Histories.</p> <ul style="list-style-type: none"> • Murton (unpublished). The Kaipara Harbour Report. Draft. Volumes I-VII. Part V. The Exploitation and Development of the Land around Kaipara Harbour. • Murton (unpublished). The Kaipara Harbour Report. Draft. Volumes I-VII. Part III. Land, the Foreshore, and Settlement.
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The first bathymetric survey of the Kaipara harbour was carried out in 1852 (Wright 1969) by Captain Durie in the HMS Pandora and the activities of Captain James Stanaway, whom was to become the first pilot in the Kaipara and the Harbourmaster. This was to prevent any further ship losses as, in all, 42 ships were wrecked while navigating the Kaipara Harbour.

Within 85 years saw the rise and fall of the Kaipara port. Peaking in export at 190,000 tonnes in 1905 where exports steady declined to the port being closed in 1939. Once the timber was removed from the land, it was tamed into an English landscape to firstly undertake sheep farming then over time shifting into beef and bull farming and dairy farming. Townships that predominantly supported timber mill operations and exports became derelict but those townships that supported wider services such as postal, railway, banks, dairy factory, schools and other industries still remain today. Between 1860 and 1920 these Pākehā activities alone drove the settlement process and shaping of the socio-economic landscape of the Kaipara. For example, Wellsford, were made by the railway; Dargaville and Helensville were transformed and survived due to the presence of a dairy factory. However, all three townships are transforming again as the dairy factories shut down and the use of railway to transport goods (particularly, exotic forestry timber) wanes. They have appeared to accumulate and maintain a variety of other functions such as agricultural services.

Before 1860 Pākehā settlement was predominantly in the northern Wairoa where three settlement nodes emerged: one around the Methodist Mission Station at Tangiteroria; one around the store at Mangawhare; and after 1854-1855 another around the Pilot Station and Customs House at Tokatoka. Pākehā settlement were found to be located close to Māori for trade and conversions, but Māori also shifted their villages to facilitate the production of timber, flax, and food.

Most of the towns were firstly located on the Harbour because of water accessibility, but with economic change and introduction of transportation they shifted away, inland, to thrive from the benefits of the railway and transportation routes, and Auckland – *Tamaki makau-rau*³ (Figure 1). The implications for Kaipara Māori from Pākehā settlement and development has been documented in Murton (unpublished), Waitangi Tribunal records, including the reporting on the first Native Land Court which was held in the Kaipara between 1865 and 1873 (Hamer 1996).

What has been noted from the land transactions between Crown representatives and Māori, particularly chiefs, was that, in New Zealand at the time Ngāti Whatua were land rich in comparison to other iwi, except in the South Island. Michael Bassett, Waitangi Tribunal Member (Waitangi Tribunal 2006), sums up the unique aspect of Kaipara case:

³ Tamaki makau-rau means Tamaki of 100 lovers. A number of explanations for this name exist. See Daamen et al (1996) for more explanation.

“The landholdings of Māori in the Kaipara area in 1840 were probably greater than were enjoyed by Māori anywhere except in the South Island. Because of the intertribal wars in the early years of the nineteenth century, there were relatively few Māori (between 700 and 800) left in an area variously estimated to cover between 750,000 and one million acres of land. At the time of first European settlement, Māori landholdings averaged 1,250 acres for every man, woman and child.”

“The large open spaces were a problematic asset. Ever since Te Ika a Ranganui in 1825, another outbreak of violence between Ngāti Whatua and Ngāpuhi [sic] lurked as a possibility, and many Māori shifted south and east out of fear. It is clear that some parts on the eastern side of the claim area were largely deserted for many years after 1825. Ngāti Whatua invited Governor Hobson to establish his capital in Auckland in the hope that a settler presence in the wider area would contribute to their greater security.

“By the early 1860s, most Māori chiefs appear to have understood what was at stake in the European concept of ‘sale’ and to have made a conscious choice to sell land deemed surplus to requirements. Enough evidence was supplied to us to show that settlers paid money to Māori willing to sell. Māori in turn were active in assisting the Native Land Court after 1865 with the process of establishing their rights to sell....Everywhere in New Zealand Māori populations declined after 1840 as disease decimated numbers....By 1900, the number of people still legally deemed to be Māori within our claimant area appears to have been no more than 270.

In summary, the settlement and development patterns in the Kaipara landscape saw the disconnection of Māori from natural resources as a result of timber clearing, land transactions; and the dispersed settlement pattern that reflected the purchasing of desirable land for lamb and dairy farming. Their patterns of mobility were modified, although use of the Harbour, rivers and beach ecosystems continued, and along, with this, some seasonal movement. A number of kainga were consolidated into small land areas but Māori ability to compete in the new economic markets being developed as a result of Pākehā settlement were limited even though significant investment (e.g. cheap credit through advances to settler programs; public works programs; development of marginal Crown land by Lands and Survey Department), legislation and policy was provided from the settler governments. This topic however, is outside the scope of this report, but details are outlined in Murton (unpublished, see Part III).

Throughout the period between 1860 and 1960, the Kaipara land and seascape economically and demographically changed. Kaipara Māori did survive the impact of colonisation and since the settlement of Te Uri o Hau in 2002 has seen the declaration of a statutory acknowledgement of the importance of the World of Kaipara and the recognition Kaipara Māori play in future natural resource management.

13.6 STATUS OF CURRENT INFORMATION

'When people do not pay for the consequences of their actions, we have market failure'

The Stern Review 2006⁴

The information sourced for this chapter pre-dates the global economic recession and credit crisis that occurred (and continues) in late 2008. Information sourced for this chapter also did not predict the rapid increase in the concern for climate change impacts to the economy and environment. This information was also compiled prior to the establishment of the new Auckland City governance and the Auckland Transitional Authority; and the revised Foreshore and Seabed Bill. Considering these constraints gaps and opportunities are identified in light of the information collected and current economic situation.

13.6.1 THE 'RURAL' LANDSCAPE

The World of Kaipara is a rural landscape with a southern rural-urban relationship. The landscape is dominated by economic activities such as: agriculture (largely dairy farming); horticulture (mainly kumara) (Figure 2), viticulture, sand mining and quarries. Emerging industries include aquaculture, organic produce, and tourism. Support sectors such as light engineering and construction are also important to the area. The natural land and seascape stands fragmented and disconnected, with multiple stressors operating directly and indirectly, which has seen the environmental values of the Kaipara decline.

Some of the key drivers that shape and change the socio-economic characteristics, and most probably the future opportunities, include:

- Community profile – age, education, income, employment, ethnicity
- Values, cultural and ethical frameworks of the communities
- Climate change
- Biogeophysical resources and status – freshwater resources, fisheries, ecological health of processes, ecosystem services
- Economy – local, regional and national
- Population growth patterns
- Aging population
- Production and consumption patterns
- Globalisation

⁴ Stern (2006). Stern Review: The Economics of Climate Change. 576pp.

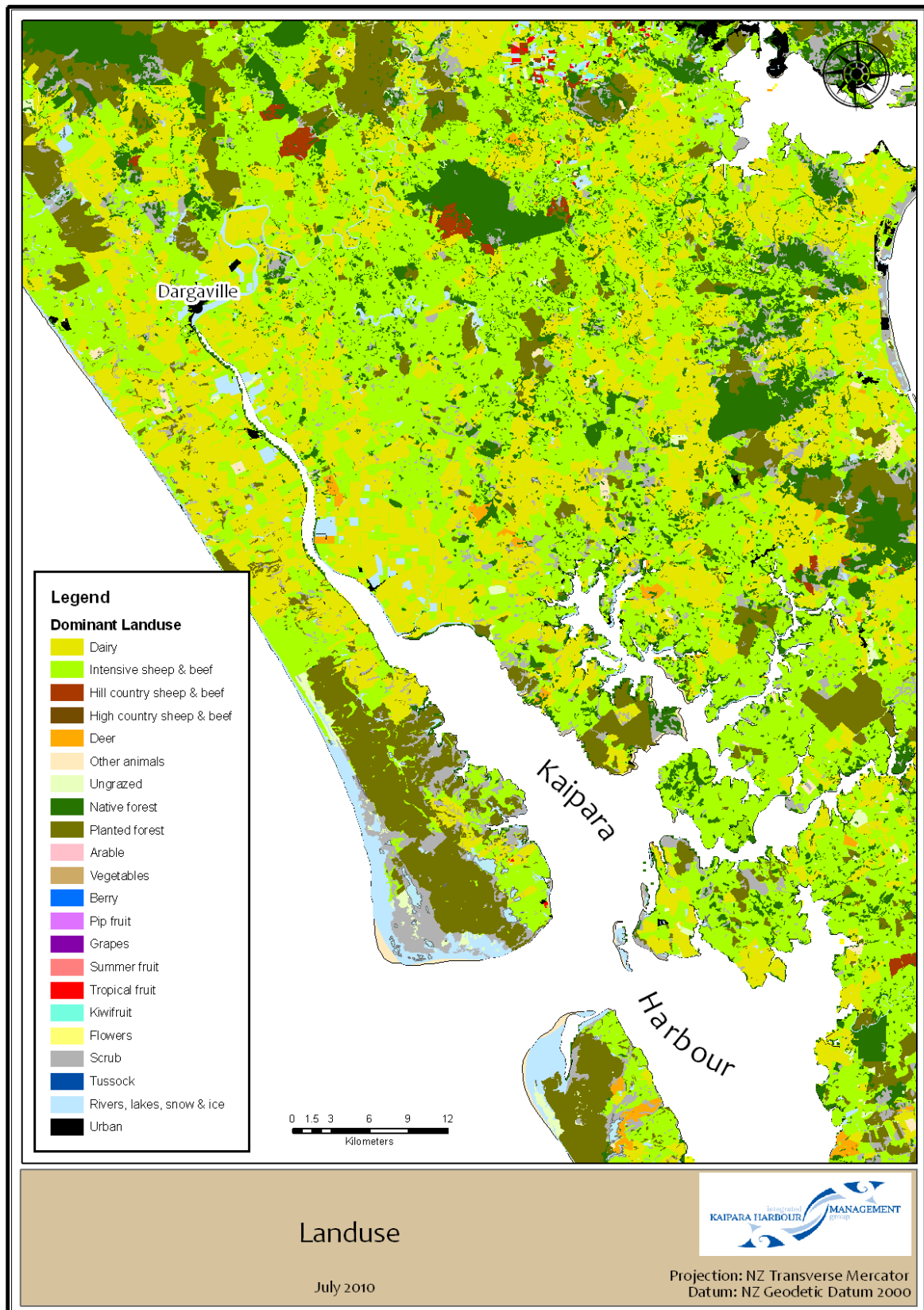
- Land use change
- Southern Kaipara (Auckland) urban-rural interface

Globalisation was included here because New Zealand, and therefore, the Kaipara, is exposed to a mosaic of international commitments and agreements. Trade and other activities, and relationships, bring benefits such as economic growth and wealth, exporting opportunities and access to new innovations and ideas. But they may also bring costs, such as biosecurity, intensification of production, climate change, and increased demand for natural resources (e.g. fisheries, freshwater, raw minerals).

The community profile (e.g. employment, skilled labour market, housing, education, income), values, culture and ethics shape the socio-economic characteristics of the Kaipara; and all have changed, firstly with settlement patterns and development and more recently economic markets (indicators of change include: increasing number of dairy farms; decreasing number of fishers; and closing down of dairy factories).

The urban-rural interface with Auckland city is seeing added pressures to the environmental values of the southern Kaipara. Of concern is the ongoing decline of all ecosystems – terrestrial, freshwater, shrubland, wetland, estuarine and duneland-sandfield. This is a consequence of the intensification of pastoral farming which introduces substantial diffuse or non-point source pollutants such as sediments and nutrients into an already stressed environment. The rural area is growing rapidly with an expanding urban-rural population and need for residential development, infrastructure and access to the Kaipara coastline and resources.

Figure 2. Landuse types for the Kaipara catchment. (Source: Landcare Research, Agriquality)



13.6.2 COMMUNITY PROFILE

The following information describes the profile of the community of the Kaipara Harbour and catchment; population size, iwi/hapū characteristics, census information, such as age groups, families, education, household size and labour force. This information has been sourced from the following sources:

- Statistics New Zealand Census 2006– Quickstats Kaipara District, Whangarei District and Rodney District (www.statistics.govt.nz)
- Statistics New Zealand Iwi Profile Te Uri o Hau (Statistics New Zealand 2006a)
- Statistics New Zealand Iwi Profile Ngāti Whatua (Statistics New Zealand 2006b)
- Statistics New Zealand Iwi Profile Te Roroa (Statistics New Zealand 2006c)

There are some limitations with the census data collected and statistics produced. They include: some degree of non-response involved particularly in rural areas where a significant percentage of residents may not fill out or even be given access to census forms; self-reporting also has a degree of error; data entry and statistical manipulation may all alter the original information. However, a range of demographic, educational, employment and health-based information can be drawn from the census data.

Information on community goals and values will also be described together with current examination of the socio-economic deprivation index analysis using New Zealand Census information.

Community Goals

Three examples of the LTCCP goals and community outcomes of Districts that predominantly occur in the Kaipara were investigated and found to vary significantly (Table 1). These community outcomes are implemented using Council annual plans and district plans as required under the Resource Management Act and Local Government Act. The community outcomes listed in Table 1 are not in any order of priority but essentially encapsulate what the community identified through Council consultation processes.

Table 1. Long-term Community Council Plan (LTCCP) community outcomes.

Kaipara Community “Kaipara’s Future – Working Together” 2009/19	Rodney Community “Vision Rodney” 2006/16	Whangarei Community 2009/19
1. Sustainable economy	1. A country look and feel	1. A sustainable, environmentally responsible District which values its natural uniqueness
2. Strong communities	2. Contained and distinctive towns and villages	2. A District which is safe and crime free
3. Safety and a good quality of life	3. Maintained lifestyles and environmental care	3. A community which is healthy and educated
4. Special character and healthy environment	4. Safe and healthy communities	4. A vibrant and growing local economy
	5. Jobs and opportunity in Rodney	5. A District with community programs and facilities for all
	6. Locally determined futures	6. A community which values its culture and heritage

Community Characteristics

To move towards understanding socio-economic opportunities in the Kaipara, some key characteristics of the Kaipara catchment community have been explored. They are:

- Larger **population** occurs in both the Rodney and Whangarei Districts compared to Kaipara District (Table 2).
- At the time of the 2006 Census, between 22.7-48.6% of **Ngāti Whatua** descent in Aotearoa reside in the Auckland region compared to 7.4 to 22.6% in the Northland Region (Statistics New Zealand 2006b). The proportion of the New Zealand population of Te Uri o Hau and Te Roroa descent also reside mainly in Auckland and Northland regions (Statistics New Zealand 2006a, b).
- The main iwi for the Kaipara catchment is **Ngāti Whatua** which encompasses the hapū Te Roroa, Te Uri o Hau, Te Taoū, Ngāti Rango and/or Ngāti Rongo, Ngāti Hine and Ngāti Whātua Tuturu. Te Roroa has recently established their status as iwi. However, these tribes descend from common ancestors – Tuputupuwhenua and Haumoewharangi, but each hapū and iwi acts independently and autonomously within their identified rohe.
- In 2006, 81% of **Ngāti Whatua** iwi members lived in urban areas (towns or cities of 1,000 people or more), with 66% living in areas with a population of 30,000 or more (Statistics New Zealand 2006b).
- The median **age** of **Ngāti Whatua** population was 21 years in 2006, compared to 36 years for the total New Zealand population (Statistics New Zealand 2006b). The Māori population has a youthful distribution than other population groups (Singh 1999).

- There are more **female** than **male** residents across the Kaipara catchment for both non-Māori and Māori (Table 2).
- Māori in the Kaipara District were less qualified than total New Zealand Māori – 48% had no **qualification**, 31% had a school qualification as their highest qualification; and 21% had a post-school qualification (Kaipara District LSM Steering Group & Ministry of Social Development Family and Community Services 2009) (Table 2). Overall, Māori people have less formal educational qualifications than non-Māori (Singh 1999). However, between 31% and 35% of people have a school qualification across the Kaipara catchment local districts.
- The median **income** (personal) was higher in the Rodney District compared to Whangarei and Kaipara Districts, at \$26,600 for persons aged 15 years and over, which is higher than the New Zealand median of \$24,400 (Table 2). Māori are more likely to be unemployed and actively seeking work with more non-Māori being self-employed (Singh 1999).
- A greater proportion of non-Māori own their own **home** compared to Māori. Māori are also more likely than others to rent their properties.
- Apart from English, the next most common spoken **language** was Te reo Māori across the three districts. In 2006, 28% of Ngāti Whātua could hold a conversation about everyday things in te reo Māori, a higher proportion than in 2001, which was 27% (Statistics New Zealand 2006b). Of the Ngāti Whātua population whom could kōrero Māori, 64% were aged 15-64 years. 56% of Ngāti Whātua te reo Māori speakers were female and 44% were male.
- The households participating in the 2006 census, 49% of households in the Kaipara District have access to the **internet**, compared to 54% in Whangarei and 66% in Rodney, and 61% for New Zealand.

Table 2. Kaipara catchment community profile characteristics. Personal Income and Employment information relate to aged 15 years and over (Source: Statistics New Zealand, Census 2006).

*Does not include offshore islands.

District	Size of District (& area occupying Kaipara catchment)	Population 2006 (% describes NZ population in District)	Gender Profile	Education	Personal Income	Employment ⁵
Kaipara	3,114km ² (2,922km ²)	18,135 (5%)	9,009 Male 9,126 Female	35.9% no qualification 33% school 30% post school	\$20,200 median 12% >\$50k annual income 50% <\$20k annual income	64% population employed 2.9% unemployment rate 'Managers' and 'Professionals' most common occupation
Whangarei	2,840km ² (1,565 km ²)	74,463 (1.8%)	36,222 Male 38,241 Female	29.7% no qualification 30% school 37.6% post school	\$22,000 median 15% >\$50k annual income 46% <\$20k annual income	61% population employed 3.8% unemployment rate 'Professionals' most common occupation
Rodney	2,402 km ² (1,708 km ²)	89,559 (2.2%)	43,854 Male 45,711 Female	20.9% no qualification 33% school qualification 36% post-school	\$26,600 median 21% >\$50k annual income 40% <\$20k annual income	60% population employed 3% unemployment rate 'Managers' and 'Professionals' most

⁵ Employment data does not include self-employed persons or business owners.

District	Size of District (& area occupying Kaipara catchment)	Population 2006 (% describes NZ population in District)	Gender Profile	Education	Personal Income	Employment ⁵
						common occupation
New Zealand		4,027,947	1,965,618 Male 2,062,329 Female	25% no qualification 35% school qualification 39.9% post-school	\$24,400 median 18% >\$50k annual income 43% <\$20k annual income	60% population employed 5.1% unemployment rate 'Professionals' most common occupation



Iwi/hapū

District	Population (% describes total iwi/hapū in district population)	Gender Profile	Education	Employment	Personal Income
Kaipara	3,810 (22%)	1,848 Male 1,965 Female	48% no qualification 31% school 21% post-school	58% employed 11% unemployment rate 'Labourers' most common occupation	\$20,900 median 10% >\$50k annual income 48% <\$20k annual income
Whangarei	17,604 (25%)	8,517 Male 9,087 Female	43% no qualification 31% school 27.2% post-school	14% unemployment rate 'Labourers' most common occupation	\$19,200 median 9% >\$50k annual income 52% <\$20k annual income
Rodney	7,470 (14.5%)	3,714 Male 3,756 Female	36.6% no qualification 35% school 29.3% post-school	8% unemployment rate 'Labourers' most common occupation	\$24,700 median 16% >\$50k annual income 42% <\$20k annual income
New Zealand	565,329 (14.6%)	274,860 Male 290,329 Female	39.9% no qualification 32% school 27.9% post-school	11% unemployment rate 'Labourers' most common occupation	\$26,600 median 21% >\$50k annual income 40% <\$20k annual income

Socio-economic Deprivation

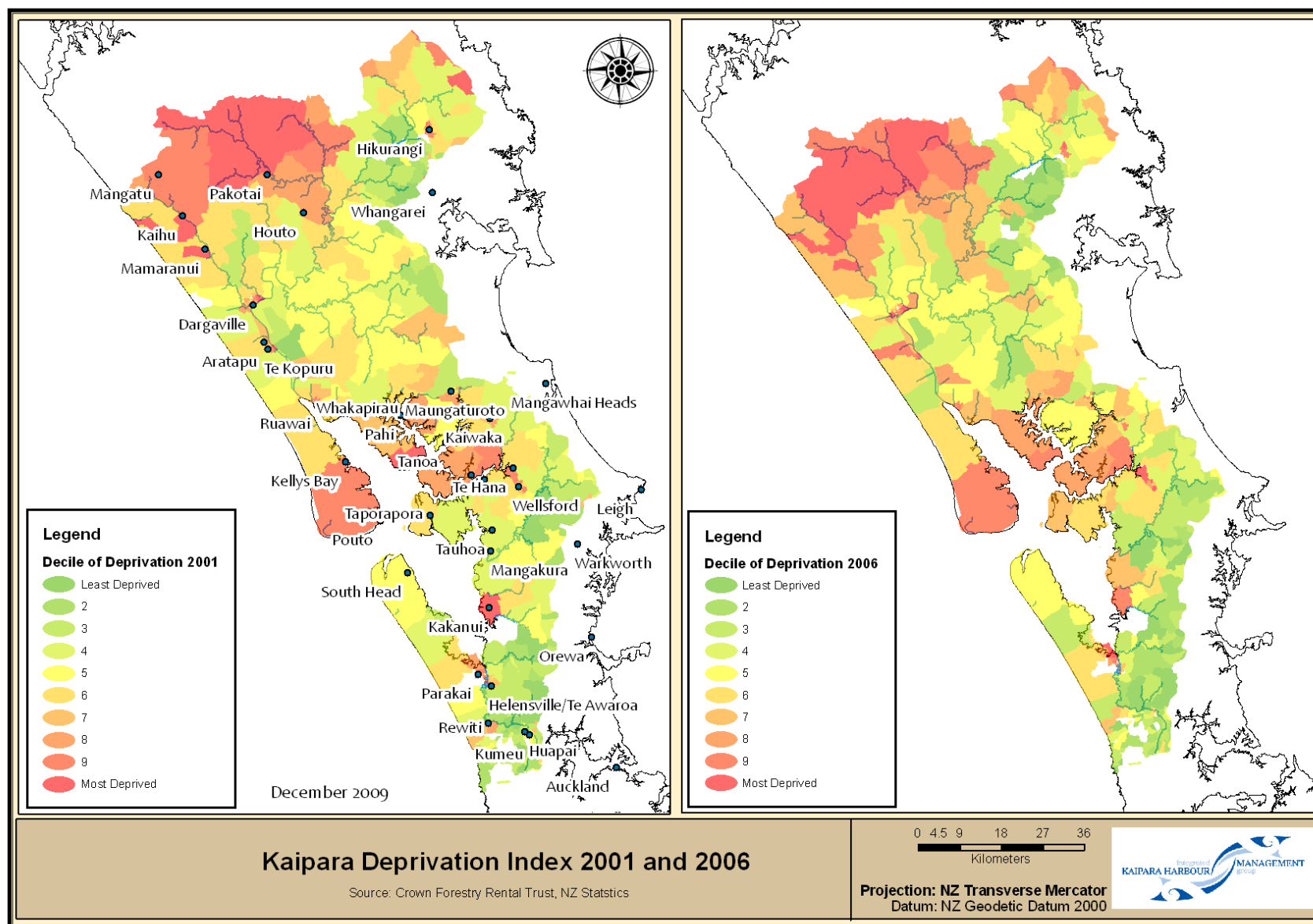
The New Zealand index of deprivation 2006 (NZDep2006) builds on NZDep91, NZDep96, and NZDep2001, and has been developed for three reasons: (1) *resource allocation* where the index of deprivation is used in capitation funding formulas for primary health care services, the population-based funding formula for District Health Boards and, in funding formulas for social services in other sectors. (2) *research* in health and other social services where relationships between socioeconomic deprivation and health outcomes; increasing levels of deprivation are associated with higher mortality rates and higher rates of many diseases; and (3) *advocacy* where the index is used by community groups and community-based service providers to describe the populations they service to advocate for extra or different resources (Salmond *et al.* 2007).

The NZDep2006 combines nine data variables collected from the 2006 national population census. The NZDep2006 reflects 8 dimensions of deprivation. They are: income, owned home, support, employment, communication, qualification, transport, and living space. The NZDep2006 data was retrieved from the Statistics New Zealand web portal for the meshblocks⁶ located within the Kaipara catchment. The data was spatially mapped using ArcInfo GIS software (Figure 3). The NZDep2006 index of deprivation is in an ordinal scale form ranging from 1 to 10, where 1 represents the areas with the least deprived scores and 10 represents areas with the most deprived scores. The index applies to an area not individuals.

The areas or meshblocks found in the Kaipara catchment with the most deprived scores appear to coincide with isolated areas, such as Pouto, Parakai, Tinopai and Kakanui (Figure 3). To begin to understand the reasoning behind results of the NZDep2006 for the Kaipara is beyond the scope of this report and was include here in this report to highlight the type of socio-economic information available spatially and temporally through New Zealand population census. Also of note regarding the use of the index of deprivation to inform environmental planning and resource investment for environmental socio-economic opportunities across the Kaipara catchment was found not to be a tool for such situations.

⁶ Meshblocks are geographical units defined by Statistics New Zealand containing a median of around 87 people in 2006 (Salmond *et al.* 2007).

Figure 3. The NZDep2006 Index of Deprivation for meshbocks found in the Kaipara catchment for 2001 and 2006.



Growth

Details regarding population growth characteristics of the three Districts occupying the Kaipara catchment are given below. Characteristics do overlap between the Districts and are noted.

Kaipara District

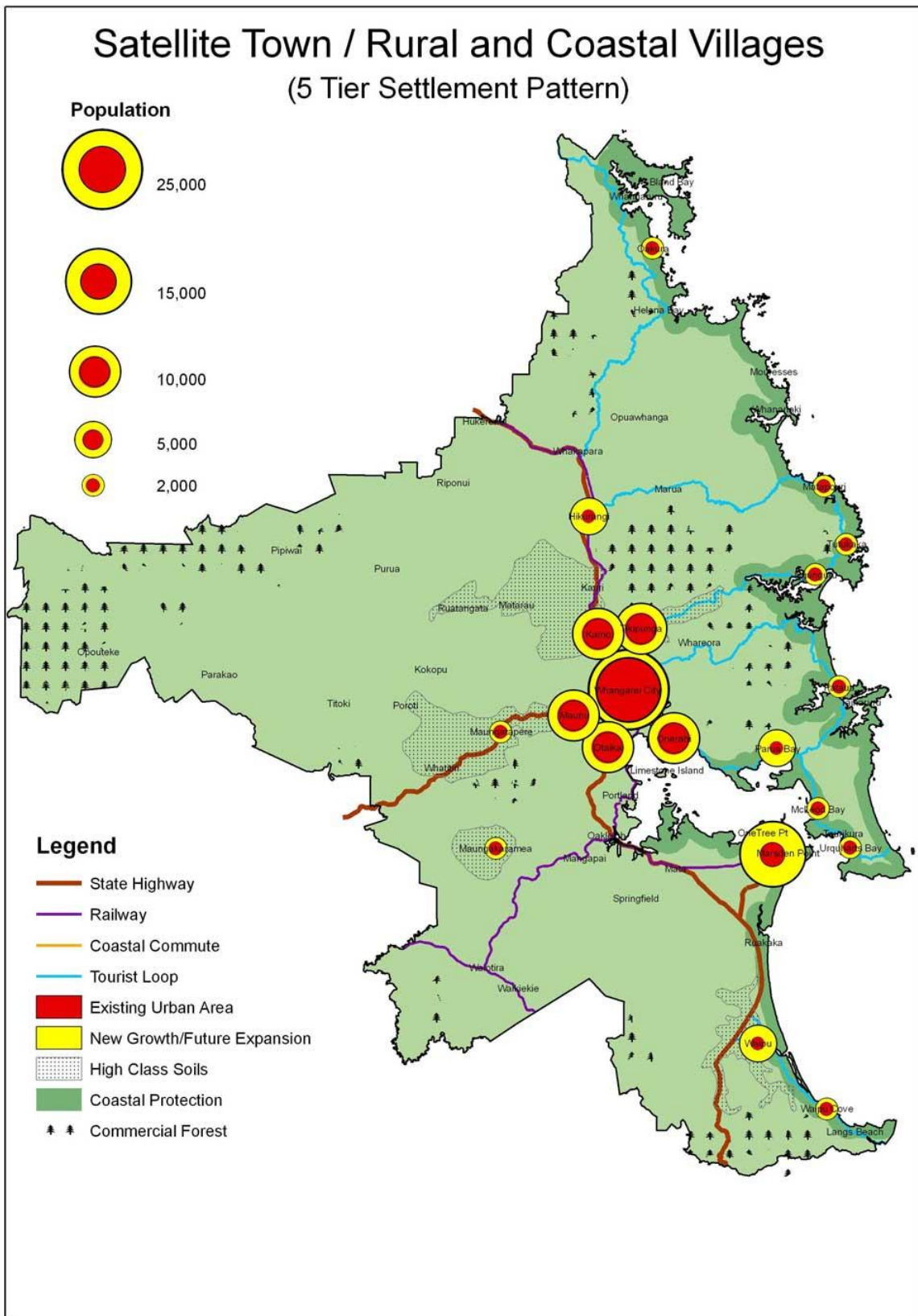
- Up to 94% (2,922km²) of the total land area of the Kaipara District occurs within the Kaipara catchment. The Kaipara District had an estimated resident population of 18,135, which is one of the lowest population densities in the North Island. Population projections for the district predict a 3% decline by 2026 (Statistics New Zealand 2005).
- The demographic profile differs from Rodney District which is expected to see an increase of more than 50% in population in the next 20 years.
- The majority of Kaipara District growth in residential development and subdivision and infrastructure, has been outside the Kaipara catchment on the east coast at Mangawhai. A Community Structure Plan (non-statutory) has been developed with the community of Mangawhai. The Kaipara District Council has identified Ruawai, Dargaville, Baylys Beach, Matakoho, Te Kopuru, Tinopai, Tangiteroria, Kaiwaka, Maungaturoto, Pahi and Paparoa townships as 'growth areas' in the Proposed Kaipara District Plan 2009. It is proposed that Structure Plans will be developed for these 'growth areas'.
- Dargaville is the largest settlement in the Kaipara District and is the centre of most manufacturing, labour force (predominantly employed in farming and forestry) and retail service activities. It has substantial commercial and industrial areas. Community facilities include a hospital, schools, library and reserves.
- Rural subdivision has mostly occurred in the southern portion of the Kaipara District around Kaipara Harbour.
- There has been an increase in demand for industrial development, particularly in Maungaturoto and Dargaville, but lacked vacant industrial zoned land at suitable sizes.
- Coastal settlements around the Kaipara Harbour have experience population growth and requirements for subdivision, particularly for Baylys Beach, Tinopai, Pahi and Whakapirau (Beca Carter Hollings & Ferner Ltd (Beca) 2009). This has been mainly for holiday homes. This demand has since slackened due to the global economic recession and credit crisis.



Whangarei District

- Over half (55%) of the total land area of the Whangarei District occurs within the upper northeastern parts of the Kaipara catchment, predominantly a rural pastoral area.
- Approximately 80% of the Whangarei District's population increase is occurring in the rural and coastal areas; Northland is one of the most economically underdeveloped regions within New Zealand, with a negative perception associated with Whangarei as a place to engage in business (Whangarei District Council 2003).
- The district has a resident population of around 74,000, as of census 2006. It has a higher proportion of the population not within the 'working' workforce and 25% of the population being Māori. The population is projected to increase to 86,000 in 2016, to 96,173 in 2026, and to 104,883 in 2036; with an average growth rate of 1.36% per annum through the life of the growth model (Whangarei District Council 2008). The growth model was prepared by the District Council to assist with future infrastructural planning. These projections do not reflect social and economic vitality of the District nor, does it consider non-demographic factors such as major government decisions, war, climate change, natural hazards.
- A majority of the residents live in the urban area (60%) compared to 20% in the rural area (Whangarei District Council 2009).
- Population growth has shown a steady increase for the District. Between 2001 and 2006 the population increased by 9.35%, compared to 7.8% for New Zealand (Whangarei District Council 2009).
- There has been a rural residential increase in population in the western parts of the District that lies within the Kaipara catchment.
- The Whangarei District Council Growth Strategy: Sustainable Futures 30/50 is being developed in partnership with iwi/hapū and encompasses four 'well-beings' – cultural, social, environmental and economic.
- The Sustainable Futures 30/50 present three alternative futures for the district: (1) Lightly Regulated, Market Led Development; (2) Twin City/Urban and Coastal Spread; and (3) Satellite Town/Rural and Coastal Villages. Following assessment and consultation. Future Three (Figure 4) has emerged as the preferred future and development pathway for the district over the next 30-50 years. Future Three represents controlled, consolidated development pathway with a structured five-tier settlement pattern. This future would see rural settlements such as Hikurangi and Maungatapere, which are within the Kaipara catchment, being developed to support a population of around 2000. This future also has the least impact on the delivery of ecosystem services (Coleman & Zucchetto 2009). However, it was uncertain under this future scenario if these services would deliver on the restoration of indigenous vegetation.

Figure 4. Whangarei District Sustainable Futures 30/50 - Future Three.

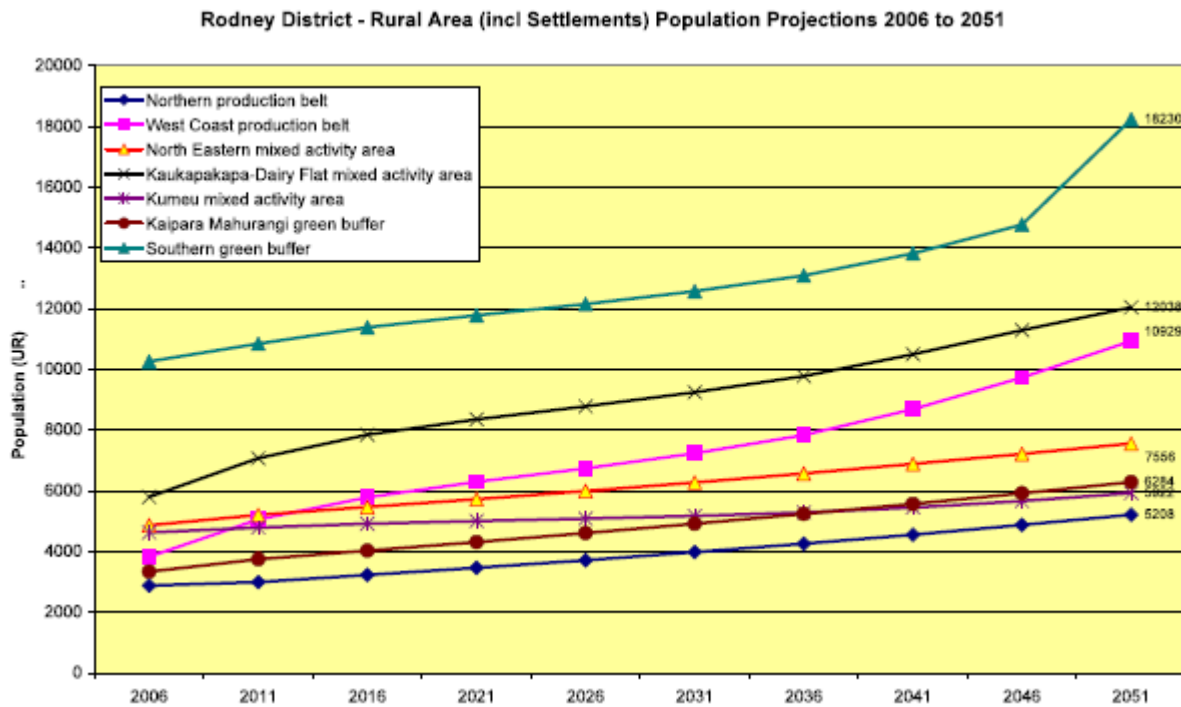


Rodney District

- The current population size of the Rodney District, as of the last census in 2006, was 89,559. Up to 71% of the total land area of the Rodney District occupies the Kaipara catchment. A majority (92%) of the District is zoned rural (specifically, General Rural Zone, Landscape Protection Rural, East Coast Rural, Countryside Living Rural, Countryside Living Town) (Rodney District Council 2009a).
- The Rodney District Council is a signatory to the Auckland Regional Growth Strategy (RGS) 2050 and a member of the Auckland Regional Growth Forum; which outlines a vision for Auckland in 50years time with a population of 2 million. The purpose of the RGS was to accommodate growth in a way that best suites current inhabitants of the Auckland Region.
- Northern and Western Sectors Agreement 2001 (NWSA) was also developed for the Rodney District to effectively manage settlement and growth and appropriate locations and sequenced infrastructure development is controlled rather than ad hoc. This has allowed for focusing growth in existing towns and settlements however, the rural population has exceeding the 2021 population projection of 27,444 by 9,000 by the time of the 2006 census; the rural population is now projected to reach 46, 212 at 2012 at its current rate of growth (Rodney District Council 2009a).
- A Rodney District Council Growth Model was developed in 1991 preparing its own population and dwelling growth projections (Rodney District Council 2008b). Using longterm population growth assumptions, the Model seeks to allocate population growth to 117 separate urban and rural planning area units (PAU's), which are an agglomeration of Census Meshblock areas based around existing identified community spheres of influence. The Model is calibrated at the time of each Census to assess how the projections for each PAU match actual dwelling and population numbers from the Census data. The Model apports growth projected from Census data according to a detailed analysis of development capacity, known infrastructure upgrades and fixed infrastructure constraints, and adjusted by a range of attractiveness factors (Rodney District Council 2009a). Figure 5 represents the conceptual future of the Rodney District produced for Rural Strategy and Planning Rodney. Population trends are seeing a shift from a strong focus on the Hibiscus Coast of the Rodney District to the rural areas of the western sector. Analysis has shown that areas like Kumeu and Riverhead have continued to grow, particularly in land surrounding these settlements, despite the Council not facilitating infrastructure development.



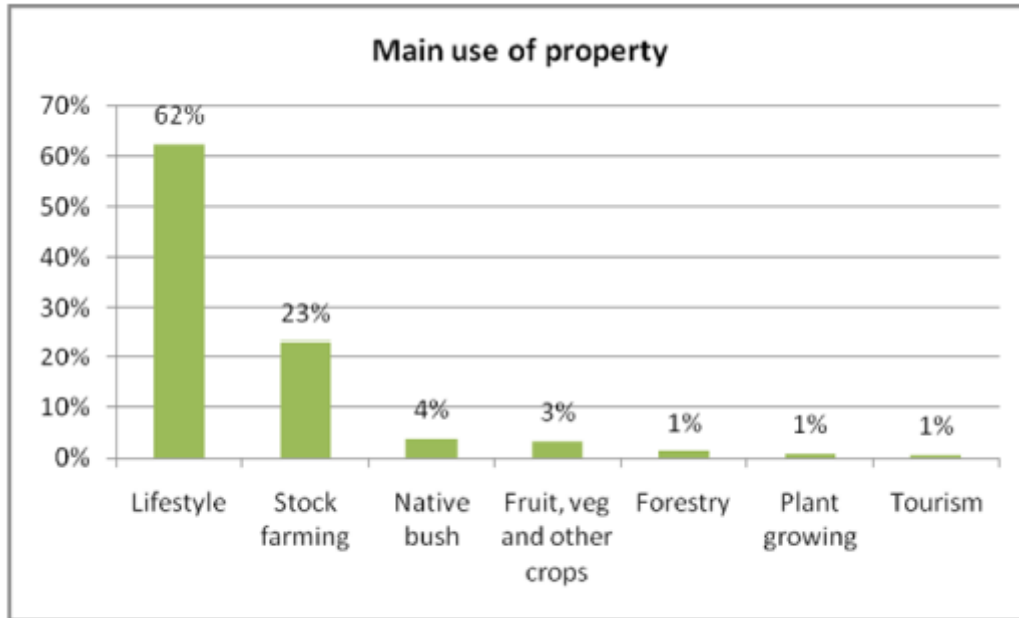
Figure 5. RDC Growth Model rural population projections 2006-2051.



- The Rodney Rural Strategy has been developed within the context of the RGS, LTCCP, Planning Rodney and Vision Rodney, 'green belt strategy' and Rodney Council decisions on farm parks and rural hamlets (Rodney District Council 2009a).
- Centre's for population growth that occur in the Kaipara catchment include Kumeu-Huapai-Waimaukau area which have been identified by Auckland Regional Council and Rodney District Council (Rodney District Council 2009a).
- Findings of a GIS based analysis of the capacity of rural Rodney District to accommodate further growth showed that the rural parts of the District has the ability to accommodate a significant amount of the region's future population growth. The analysis found that there is already sufficient capacity in existing unoccupied rural titles for over 20 years, allowing for a increase in rural population from 36,000 people in 2006 to over 100,500 people (Rodney District Council 2008b).
- Growth in demand for 'lifestyle blocks' has occurred in the last five years (Figure 6). A similar demand has been send in the Kaipara District. A survey carried out of rural landowners, in the Rodney District, 48% earn no income from their land and 36% earned between 1% to 25% of their income from their land (Rodney District Council 2009a). The Rodney District Council proposed Rural Strategy acknowledged that this information regarding the rural lifestyle values and preferences illustrated a need for off-site income of the majority landowners in rural Rodney. Thus, the research shows that people locate in rural areas because of the particular set of features and/or

attractiveness found in rural areas, rather than simply because there are insufficient opportunities to locate within existing settlements.

Figure 6. Rural lifestyle preferences survey main use of rural properties (Source: Rodney District Council 2009a).



In Summary

The growth modeling work carried out for Whangarei and Rodney Districts occurred prior to the global economic recession, which as noted usually are not considered in such growth models. The other assumption is that there is a balanced population age structure. That is, there will be no particular age group out of equilibrium. However, the current global and local trend is an increasing non-working workforce aged 65+ years. Not addressing such assumptions are unfortunate considering that significant resources will be used to inform short, medium and long-term planning for infrastructure and growth areas, all founded on these growth models.

Key attributes such as land, skills, local labour force, unemployment rates and aging population will all play an essential role in economic growth in the Kaipara. According to Statistics New Zealand projections, the bulk (62%) of future growth over the next 20 years will be around the Auckland metropolitan area. With the predominant economic driver and GDP earner being pastoral farming (or primary industries) in the Kaipara; followed by secondary industries such as manufacturing, construction; then tertiary industries such as, retail and wholesale trade, accommodation, cafes and restaurants; with an aging population there may be a shift in the labour requirements for different industries. For example, economic modeling for Northland predicts the largest employment increases to be in sectors such as hospitals and nursing homes, central government administration, preschool, primary and secondary education (Whangarei District Council 2010).

13.6.3 INDUSTRY SECTOR PROFILE

The dominant economic contributors to the local economy of the Kaipara Harbour catchment are pastoral agriculture (with a large dairy sector); horticulture (particularly kumara and specialised foods such as capsicums), viticulture, sand mining and quarries (Wilson *et al.* 2006, Kaipara District LSM Steering Group & Ministry of Social Development Family and Community Services 2009). The area is therefore, predominantly a resource-based economy, mainly servicing the domestic market with some resident export businesses mainly in dairy, forestry and horticulture. Retail, manufacturing, wholesale, finance, business services and community/personal services are under-represented in the Kaipara district (Kaipara District LSM Steering Group & Ministry of Social Development Family and Community Services 2009). Agriculture continues to be the foundation for the Kaipara District, compared to the Rodney District urban-rural mix being industry (mostly quarrying, construction, forestry) and then agriculture (Norman *et al.* 2009); Whangarei District, being more urban-rural, is founded on primary industry with key economic growth occurring in retail in the Whangarei township.

Agriculture/ Pastoral Farming

This sector is the backbone to the Kaipara catchment regional economy and this sector is believed to play an essential role in the economic recovery of New Zealand during the current global economic recession (Ministry of Agriculture and Forestry 2009a). The latest regional agricultural production survey statistics has seen a continuing decline in sheep numbers and are believed to be at the level recorded in 1950 (Figure 7) (Statistics New Zealand 2009a). A contrasting trend exists for the number of dairy cattle where there has been an increase for Northland by 6.8% between 2007 and 2008. This trend also applies to beef cattle (Figure 7). The intensification of dairy cattle across the Northland region has led to a greater area of fodder and grain cropping, particularly maize (Northland Regional Council 2007f). This has been known to lead towards long-term costs to soil structure and function particularly if wrong grain varieties are used and planted and harvested using heavy equipment. The dominant soil type of the Kaipara catchment is clay soils.

The importance of this industry to the Northland region can be readily seen in the key statistics and landuse patterns (Figure 7, 8 and 9). The industry provides direct employment or indirect employment engaged in services to agriculture industries, such as the large Fonterra milk processing plant at Maungaturoto. Primary production is vital to the Kaipara District's economy, representing 38.5% of the District's production, compared to the Whangarei District at 8.5%, which follows the national average (Infometrics Ltd 2009a). The Whangarei District's strengths lie in other industries, predominantly manufacturing and services (e.g. retail and wholesale).

The Rodney District primary sector, principally dairy and horticulture, has experienced significant decline in employment and the number of businesses. This is in line with national trends where the number of businesses has declined by 40% even though the number of dairy cows increases. This change is believed to be due to the amalgamation of smaller farms into larger ones (Norman *et al.* 2009), and competing use of land for residential development in the Auckland region.

There is a large commitment by the New Zealand Government to the development of policy to ensure the agricultural industry meets its full potential and make the best possible contribution to the well-being of New Zealanders (Ministry of Agriculture and Forestry 2009). The Ministry of Agriculture and Forestry (MAF) recent forecasts for the agriculture sector from 2009 and 2013 see a decline in the demand for New Zealand's agriculture export products which essentially drives the New Zealand economy. Due to the global recessions MAF expects international prices for New Zealand's export products to fall (Ministry of Agriculture and Forestry 2009).



Figure 7. The 2008 Agricultural Production Survey for livestock across Northland and Auckland region. (Source: Statistics New Zealand)

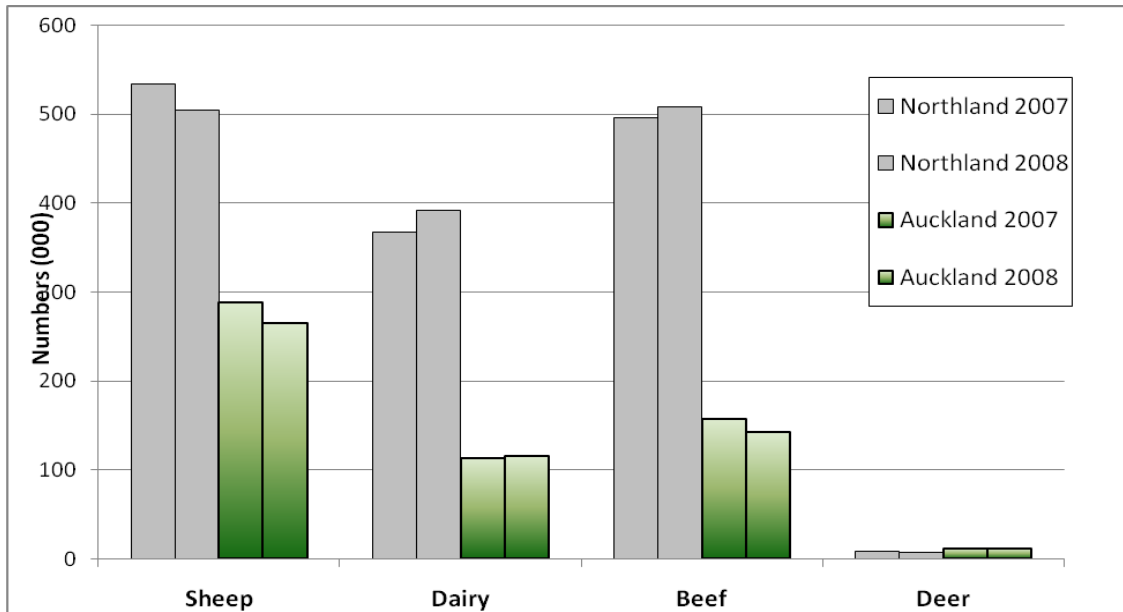


Figure 8. Landuse by regional council for 2007. (Source: Statistics New Zealand)

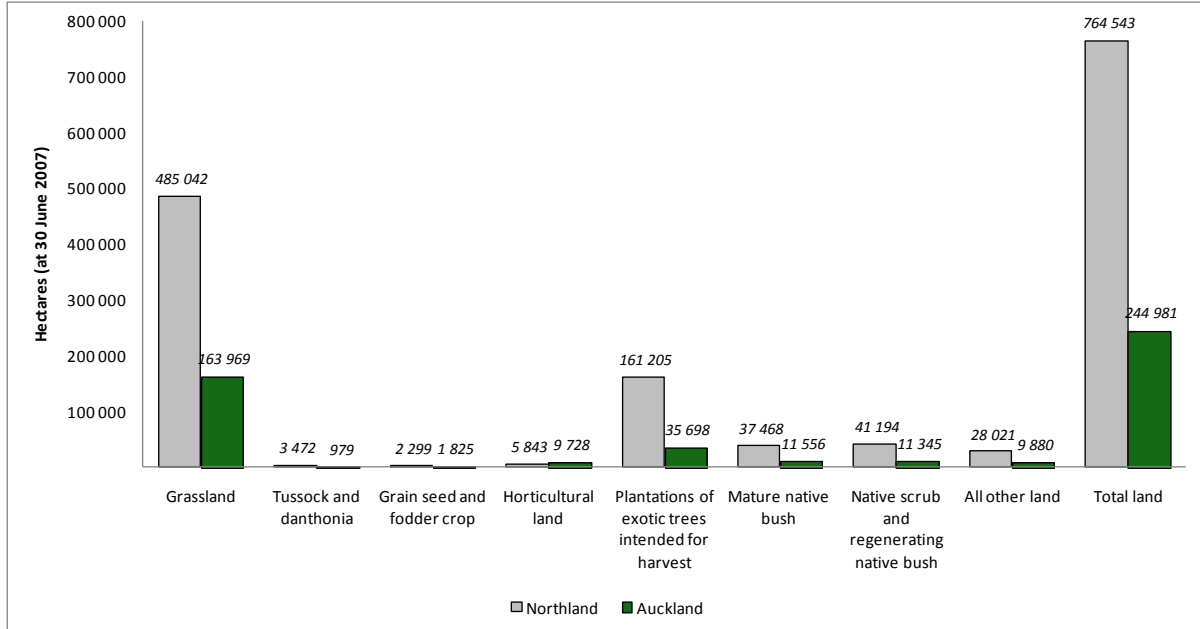
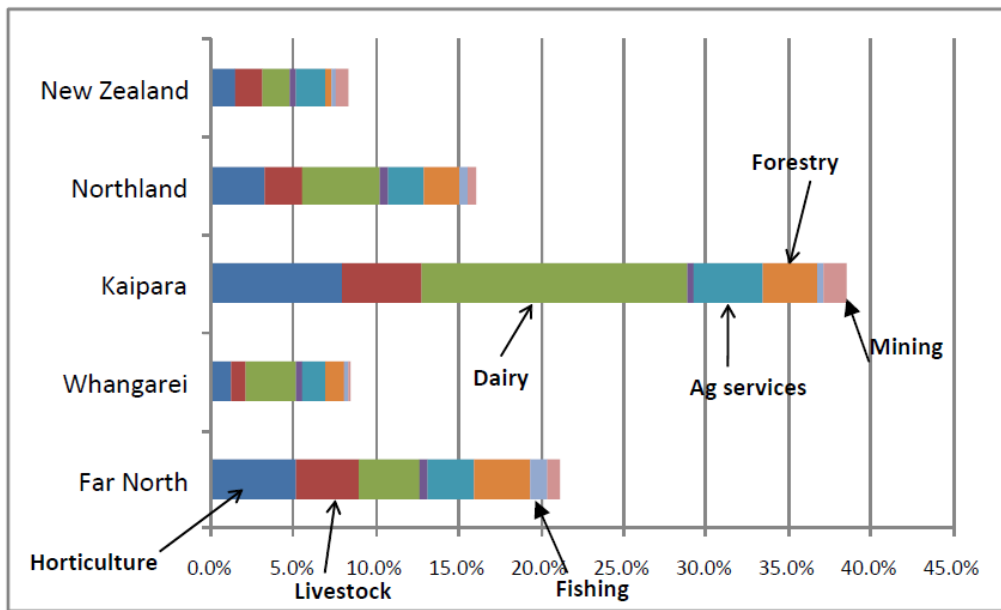


Figure 9. Primary production, % of location's total production. (Source: Infometrics Ltd 2009a)



Horticulture

Land dedicated to horticulture is considerably higher in the Auckland region (Figure 8) compared to Northland with both regions seeing an increase in land dedicated to horticulture since 2002. In 2002, there were 550 farms in horticulture throughout the Rodney District, compared to 410 in Whangarei District and 150 in the Kaipara District. The Ministry of Agriculture and Forestry (MAF) believe the horticulture industry has so far escaped the worst of the economic recession as local production and seasons did not coincide with the dramatic credit crunch hitting in October and November 2008.

Horticulture is one of New Zealand's fastest growing export sectors. The Northland region focuses predominantly on growing avocados, citrus, kiwifruit, kumara, squash and flowers. Within the Rodney District, horticulture is also well-developed, situated on the outskirts of the Auckland. The Rodney District predominantly grows plants, flowers, vegetables, grapes, berry fruit, apples, stonefruit and kiwifruit. Over 50% of New Zealand's capsicum exports in 2005 were produced within the Kaipara Harbour region (Wilson *et al.* 2006). Viticulture is also significant in the Rodney District found in the Kaipara catchment, particularly around Kumeu-Huapai which enjoys a long, well-established history of wineries in the country.

Centre for Agricultural Greenhouse Gas Research

As part of the Primary Growth Partnership initiative funding of \$190 million over four years to invest in primary sector growth and innovation, the Centre for Agricultural Greenhouse Gas Research is being established.

The Centre will be a key part of New Zealand's national and international response to address agricultural greenhouse gas emissions causing climate change.

Whom will host this research centre is still being decided by the Ministry of Research Science and Technology.

<http://www.maf.govt.nz/mafnet/press/2009/090528-primary-growth-partnership.htm>

Forestry

Around 70% of New Zealand's forest products are exported. Exotic forestry of radiate pine is an important economic sector to Northland, New Zealand and parts of the Kaipara catchment but, the Northland region does little timber processing and/or added-value activity to enjoy long-term sustainable employment or economic return. There continues to be an ongoing decline in planting (Ministry of Agriculture and Forestry 2009b).

The exotic forestry plantations that occur in the Kaipara catchment are located at Woodhill, Riverhead, Pouto, and Topuni. Most are crown forestry land and private landowners. Te Uri o Hau also own forestry plantations at Pouto and the recently signed Agreement in Principle with Ngāti Whātua o Kaipara included Woodhill Forest on the south Kaipara peninsula.

The state of the forestry industry was recently reported on by the Ministry of Agriculture and Forestry, drivers of change, and future challenges for the government and industry (Ministry of Agriculture and Forestry 2009b). Since writing this report during 2007/08 several key local and global events occurred prior to publishing. They include: (1) global economic recession and credit crisis, (2) significant decreases in the NZ\$:US\$ exchange rate, shipping and oil costs; (3) drafting and subsequent legislation of the New Zealand Emissions Trading Scheme.

Continuing with forestry activity under such current economic and environmental (e.g. climate change) circumstances will be challenging for the forestry industry. Alternative economic opportunities should be investigated where they will benefit the Kaipara catchment social, economic, cultural and environmental medium to long-term conditions.

Marine-based Industry

The marine-based industry of the Kaipara includes commercial fisheries; aquaculture and marine tourism (e.g. charter fishing, cruises, kayaking operations). Since European settlement the Kaipara Harbour has serviced and supported a successful commercial fishing and aquaculture industry which has seen both marine-based industries play an essential role in providing for the local economy and society.

Interest in the future development of aquaculture in the harbour continues particularly the Pacific rock oyster (*Crassostrea gigas*) spat collection and oyster farming using long-line or BST technology. Currently, there is one operational oyster farm in the southern Kaipara Harbour located off the Hoteo River and a total of six oyster farm leases in the northern Kaipara Harbour mainly in the Arapaoa and Ōtamatea Rivers. Three of these leases are operational, predominantly in the Arapaoa River. These northern leases are of national significance as a site of spat⁷ collection for Pacific oyster farming (Hay & AquaBio Consultants 1999).

⁷ Baby/larval shellfish which is required to cultivate oysters.

Significant investment in research and development and future sustainable management of aquaculture has occurred in the Northland region and Rodney District. For example, the Auckland Regional Aquaculture Cluster Initiative Project (known as AquA) is focused on integrating land- and marine-based sectors to produce high value products for domestic and export markets. Participants include industry, hapū, local and regional councils, universities and Te Puni Kokiri. Enterprise Northland Aquaculture Development Group has also invested in projects regarding future aquaculture development in Northland (e.g. Jeffs 2003).

Under the new aquaculture reforms, all aquaculture management has been transferred to Regional Councils from the Ministry of Fisheries. The new reforms require aquaculture to occur within an Aquaculture Management Area (AMA) listed under the Resource Management Act. No new AMA's have yet to be identified for the Kaipara Harbour in both the Auckland and Northland regions. Current commercial marine farming leases will automatically become an AMA within the Kaipara Harbour however, debate continues between Te Uri o Hau Settlement Trust and the Ministry of Fisheries regarding their oyster reserves returned to the hapū through Settlement process.

Commercial fishing has occurred on the Kaipara Harbour since the European settlement and more details around this industry are contained within Chapter 10 *Restoring Sustainable Fish and Invertebrate Stocks of the Kaipara*.

Charter fishing operations are also popular for the Kaipara Harbour particularly operating out of Helensville and the southern Kaipara harbour. There has been a marked increase in demand for fishing charters in this area due to its close proximity for Aucklanders and the need for a 'west coast' fishing experience.

Tourism

Invested in heavily since 2003 and supported through a Major Regional Initiative (MRI) partnership with NZ Trade and Enterprise, current tourism in the Northland region accounts for 5.8% of GDP of Northland which is a much larger contribution than at the national level (5.0%)

(Infometrics Ltd 2009).

The updated Northland Visitor Strategy 2008-2013, which replaces the Northland Tourism Strategy 2003-2008, remains focused on growing tourism demand and



expenditure from the 2006 base of \$657 million, particularly in the 'off-season' (Destination Planning Ltd, n.d.). The strategy was developed by Enterprise Northland and the Northland

Tourism Development Group which has representatives from the tourism industry, local government, and Department of Conservation and iwi/hapū organisations.

The implementer of the strategy is Destination Northland whom will focus primarily on: (1) *Brand* regional branding to inspire visitors to the region for life-changing experiences; (2) *Living the Destination* which is a task focusing on delivering sustainable tourism experience for both the visitor and local community providing the experience, such as, environment, Māori tourism development, infrastructure, product development, training; and (3) *Targeted Marketing* where resources will focus on economic linkages between Auckland/Waikato/Bay of Plenty triangle.

Developed in 2003, the Rodney District Tourism Strategy (Rodney District Council 2003) primary goal is to:

“develop tourism in Rodney in a way that is environmentally, economically and socially sustainable”.

Tourism for the Rodney District contributes 4.6% to the Districts GDP in 2008 (Norman *et al.* 2009). The Rodney District tourism sector has experienced a steady increase in fulltime employment and businesses since 1998. The contribution of tourism comes from three sources: (1) tourism-characteristic industries, such as accommodation, restaurants, transport services, cultural and recreational services; (2) tourism-related industries mainly retail trade; and (3) all other industries, including police services to mining (Norman *et al.* 2009).

There are four broad types of visitors to Northland. They include: culture seekers, wine and foodies, relaxers and, water lovers (Wilson *et al.* 2009). The top three popular activities enjoyed by international visitors to Northland include going to the beach, scenic cruises and dolphin swim/see experience.

Other Relevant Tourism Strategies:

Relevant tourism strategies that have been developed include:

- New Zealand Tourism Strategy 2015 (Tourism Industry Association *et al.* n.d.), with a vision being *“Tourism is valued as the leading contributor to a sustainable New Zealand economy”*. The Strategy is founded on two key values: kaitiakitanga and manaakitanga.
- Northland Regional Economic Development Strategy (APR Consultants 2002) which identifies primary sector (forestry, fishing, aquaculture, agriculture, horticulture) and tourism as *“key sectors for the future development of the region”* (APR Consultants 2002).
- Tai Tokerau Māori Tourism Strategy⁸ is currently being developed by the Tai Tokerau Māori Tourism Council whom are a member of the New Zealand Māori Tourism Council

⁸ <http://www.taitokerau.co.nz/>

- Northland Creative Industries Arts Sector Strategy (Arts Sector Strategy Steering Group 2006).
- Auckland Visitor Strategy – Bringing The World To Auckland (AucklandPlus 2007).

13.6.4 INFRASTRUCTURE

Infrastructure (roading, rail, transport, energy, and communications) is “*usually defined as fixed long-lived structures that facilitate the production of goods and services, both physical and institutional*” (The Treasury 2009); and is often considered a key aspect to economic growth at various scales. Wilson et al. (2006) analysis of the state of infrastructure within the Kaipara Harbour region believed to be a major constraint to economic development.

Both the Rodney and Kaipara District’s strategies focus on improving infrastructure around roading, stormwater, energy, signage, water supply, communications, sewerage and transport.

There are considerable barriers to improve and invest in infrastructure across the Kaipara Harbour region (Wilson et al. 2006). Kaipara District Council has one of the lowest rate base in New Zealand spending up to 70% on roading. Rodney District Council also spends a significant amount on roading (Wilson et al. 2006).

Opportunities to address such constraints may arise through the interconnections between Auckland and Northland where the Kaipara and Rodney Districts can lobby for improvement in road, rail, and broadband capacity.

13.6.5 RESEARCH, DEVELOPMENT & INNOVATION

Directions or action in research, development and innovation expansion for the Kaipara Harbour region is virtually non-existent. Wilson *et al.* (2006) reported that there was “*little appetite for science and technology parks...*”.

Integrated research, development and innovation projects or strategic directions are also non-existent in the Kaipara.

13.6.6 ECOSYSTEM SERVICES

The incorporation of ecosystem services into strategic sustainable development planning was only really utilised by Whangarei District Council Sustainable Futures 30/50 background reports (Coleman & Zucchetto 2009).

Ecosystems carry out a diverse array of processes that provide both goods and services to humans. Ecosystem goods (eg. food) and services (eg. waste assimilation) represent the

benefits human populations derive, both directly and indirectly, from ecosystem functions. Such as

- the capture of sediments by wetlands,
- protection from coastal storm damage by reefs or mangroves,
- production of oxygen, and
- sequestration of carbon dioxide (Constanza *et al.* 1997).

Key interactions within an ecosystem must be maintained for these ecosystem services to occur. Table 3 describes ecosystem services and functions which Constanza *et al.* (1997) measured to provide an average annual global value. They valued global ecosystems to be in the range of US\$16-54 trillion (10^{12}) per year, with an average of US\$33 trillion per year. The global gross national product (GNP) total is around US\$18 trillion per year. Constanza *et al.* (1997) believe these are minimum estimates because of the high level of uncertainties and because only 16 ecosystem types were measured. Ecosystem services are nearly always undervalued. Some ecosystem goods have a economic value, such as fish and shellfish, but most ecosystem services do not have a common economic worth. Some ecosystem services that are at risk because of no market or economic value include protection of shorelines from erosion, nutrient recycling, control of disease and pests, climate regulation, cultural heritage and spiritual beliefs. Such services are typically not considered in policy decisions and many are at risk (McLeod *et al.* 2005).



Table 3. Ecosystem services and functions. (Source: Constanza et al. 1997).

Ecosystem services	Ecosystem functions	Example
Gas regulation	Regulation of atmospheric chemical composition	CO ₂ /O ₂ balance
Climate regulation	Regulation of global temperature, precipitation, and other biologically mediated climatic processes at global or local levels	Greenhouse gas regulation
Water supply	Storage and retention of water	Provisioning of water by catchments, reservoirs and aquifers
Water regulation	Regulation of hydrological flows	Provisioning of water for agriculture or industrial processes or transportation
Disturbance regulation	Capacitance, damping and integrity of ecosystem response to environmental fluctuations	Storm protection, flood control, drought recovery and other aspects of habitat response to environmental variability mainly controlled by vegetation structure.
Erosion control and sediment retention	Retention of soil within an ecosystem	Prevention of loss of soil by wind, runoff, or other removal processes, storage of silt in lakes and wetlands
Soil formation	Soil formation processes	Weathering of rock and the accumulation of organic material
Nutrient cycling	Storage, internal cycling, processing and acquisition of nutrients	Nitrogen fixation, N, P and other elemental or nutrient cycles
Waste treatment	Recovery of mobile nutrients and removal or breakdown of excess or xenic nutrients and compounds	Waste treatment, pollution control, detoxification
Pollination	Movement of floral gametes	Provisioning of pollinators for the reproduction of plant populations
Biological control	Trophic-dynamic regulations of populations	Keystone predator control of prey species, reduction of herbivory by top predators
Refugia	Habitat for resident and transient populations	Nurseries, habitat for migratory species, regional habitats for locally harvested species, or overwintering grounds
Food production	That portion of gross primary production extractable as food	Production of fish, game, crops, nuts, fruits by hunting, gathering, subsistence farming or fishing
Raw materials	That portion of gross primary production extractable as raw material	The production of timber, fuel
Genetic resources	Sources of unique biological materials and products	Medicine, products for materials science, genes for resistance to plant pathogens and crop pests, ornamental species (pets and horticultural varieties of plants).
Recreation	Providing opportunities for recreational activities	Eco-tourism, sport-fishing, and other outdoor recreational activities
Cultural	Providing opportunities for non-commercial uses	Aesthetic, artistic, educational, spiritual, and/or scientific values of ecosystems

Whangarei District Council (Coleman & Zucchetto 2009) utilisation of ecosystem services as principles to assess the future scenarios of development in the next 30-50 years provided an assessment of particular ecosystem services (e.g. food and fibre; freshwater, natural hazard regulation, air quality regulation, local climate regulation, water regulation, pollution, nutrient recycling and soil formation) against settlement types (e.g. city and margins; coastal settlements, rural/lifestyle). With the concept of ecosystem services still being researched and developed Whangarei District Council has made progress in testing these services in planning for environmentally, socially, culturally and economically sustainable future. It is encouraging to see that the concept of understanding the connections between the environment and development is being considered, at this ecosystem level, in decision-making.

13.7 SUSTAINABLE SOCIO-ECONOMIC OPPORTUNITIES

“...New Zealand appears to be in a better position than many of our trading partners.”

(Ministry of Agriculture and Forestry 2009a)

“New Zealand is in a recession.... Unemployment is expected to reach 8% later in 2010.... As of July 2009, New Zealand’s GDP had fallen by a total of 5%”

(Ministry of Agriculture and Forestry 2009)

The majority of information reviewed for this chapter regarding future sustainable socio-economic opportunities and strategic planning did not predict a global recession or did not purpose any opportunities (regional or national scales) if such a situation arose. The New Zealand government has implemented both fiscal and non-fiscal stimulus approach which are both a traditional approach to an economic recession rather than an integrated approach suited to the current economic and environmental climate of the twenty-first century.

Considering the constraints and barriers the Kaipara Harbour region, an integrated socio-economic “stimulus” approach should be explored which considers also the environmental management issues directly and indirectly (e.g. climate change) that face the world of Kaipara. The Kaipara’s future prosperity will depend on the rural landscape ability to adapt to change, with resilience and a commitment to innovation.

“The world will not evolve past its current state of crisis by using the same thinking that created the situation”.

Albert Einstein

“It is not the strongest of the species that survives, not the most intelligent, but the ones most responsive to change”

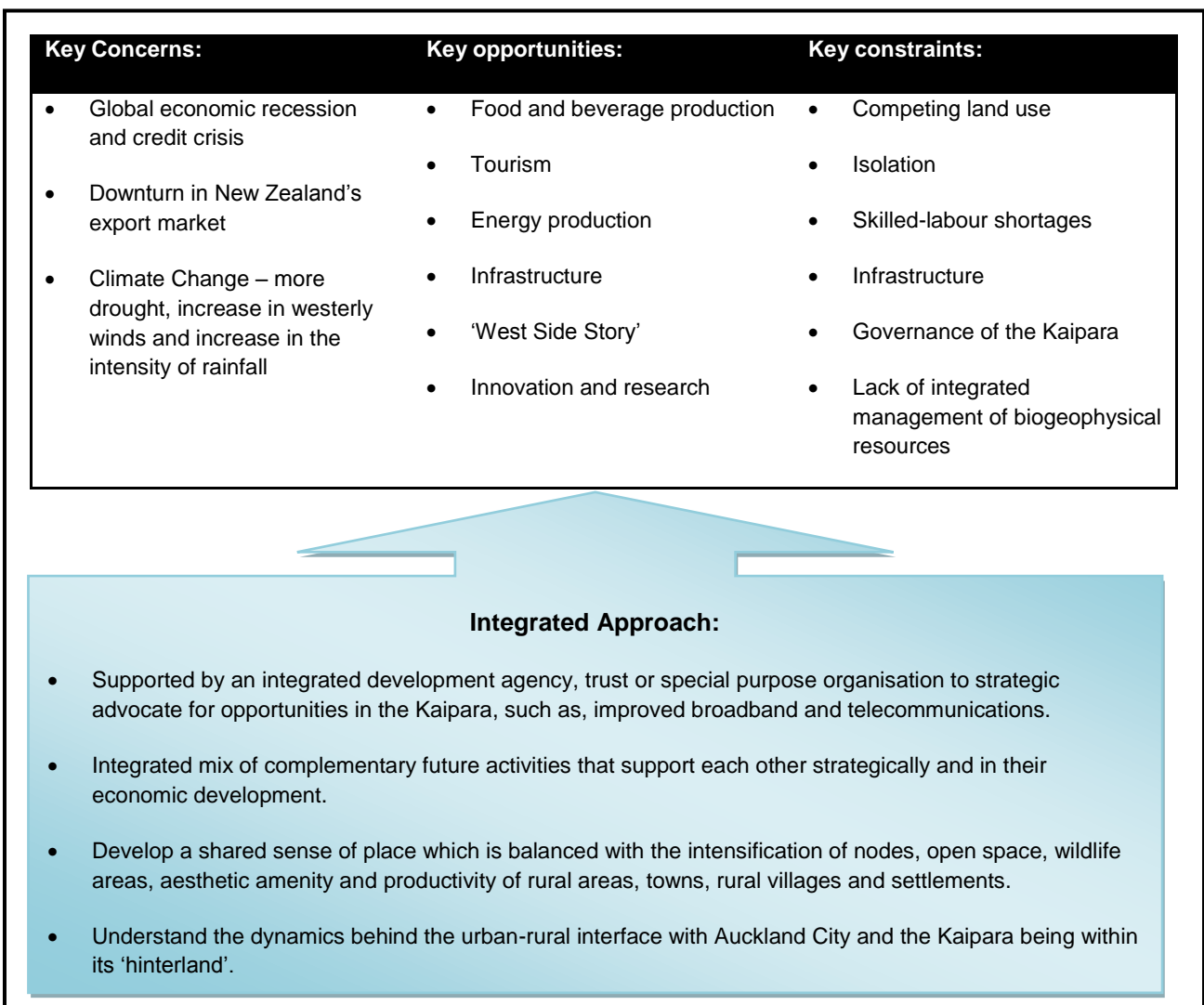
Charles Darwin



Constraints (or opportunities) to future socio-economic opportunities

Previous investigations into the constraints and opportunities for sustainable economic development have been conducted for the Kaipara region. Of note is the research commissioned by the Rodney Economic Development Trust and Kaipara Development Agency (Wilson *et al.* 2006). This investigation identified through focus group surveys and one-on-one interviews constraints to future sustainable development and opportunities in the Kaipara (Figure 10).

Figure 10. Constraints and opportunities to future socio-economic opportunities for the Kaipara all require an integrated approach to foster such opportunities.



The key concerns and constraints identified in Figure 10 may also be seen as opportunities for the Kaipara local socio-economic development. For example, the isolation of the Kaipara Harbour with the southern parts on the urban-rural boundary of Auckland City may provide

access to New Zealand's largest business, manufacturing, and tourism markets, may present an opportunity for innovative developments. Evidence indicates that labour force growth and population growth in rural areas is positively related to employment growth in urban areas (Waite *et al.* 2008). Within this interface is also a complex mix of activities; the rural economy principally supported by agricultural production yet the increase in rural-urban dwellers are engaging primarily in industrial production and services, such as, offering self-employed professional services and telecommunications. However, the rural hinterland of the Auckland region within the Kaipara catchment is impacted by both urban and rural pressures; such as land prices, conflicting land use and demands, and a changing rural community and income. Such variables can create a complexity around visions for growth and development in the southern Kaipara.

Figure 8 also describes future socio-economic development and opportunities for the Kaipara (Wilson *et al.* 2006) be founded on an integrated approach to overcome the concerns and constraints; a concept also supported by the IKHMG. Wilson *et al.* (2006) identified a key opportunity known as the 'West Side Story' concept, bringing the west side of Auckland and Northland together via the Kaipara. This opportunity could provide a sense of place, spin-offs for tourism, attracting growth and productivity.

A Changing Paradigm: to Refocus from short-term to the medium and long-term

There is also the current local and global debate around the need to shift away from the current paradigm of the growth economy towards a system that emphasises conserving natural capital which views the economy as a sub-set of the environment (McDonald *et al.* 2009). The basic premises of the current paradigm are: (1) more is always better, (2) the economy can grow forever, and (3) private property is always best. The Genuine Progress Indicator (GPI) was first developed in 1995 by a non-profit organisation, Redefining Progress. The GPI is promoted as an attempt to undertake a more holistic measure or index of well-being than Gross Domestic Product (GDP). It considers aspects of the non-market economy, such as the environment (e.g. natural capital from ecosystem goods and services, ozone depletion, loss of wetlands, well-being enhancement benefits (e.g. personal consumption, household/community work, education) and separating these from well-being detracting costs (e.g. overwork, crime, unemployment, health costs). GPI index corrects for inequality in income, and distinguishing between sustainable and unsustainable forms of consumption (McDonald *et al.* 2009).

The development of Genuine Progress Indicators is still in its infancy and the GPI assessment carried out for the Auckland region is a first for New Zealand (McDonald *et al.* 2009). Personal consumption was the main driver of the GPI for the study period, 1990 to 2006, which correlated with an increase in GPI from \$28 million to \$47 million, an annual average rate of 3.1%. This is compared with the region's GDP, which grew at a rate of 2.5%. The most significant drivers of the socio-economic costs were income inequality (\$3,615 million), cost of commuting (\$788 million) and overwork (\$520 million); and for environmental costs, was climate change (\$109 million) followed by noise pollution (\$80 million) and loss and damage to terrestrial ecosystems (\$69 million). There are some outstanding theoretical, methodological and empirical issues with the Auckland region GPI (McDonald *et al.* 2009), one of which is paucity of regional data pertaining to each environmental and socio-economic driver incorporated in the GPI index.

With the New Zealand dollar assumed to remain low over the next two years this is seeing business refocusing to medium to long-term growth rather than short-term as the global economic crisis impacts New Zealand's agricultural and forestry sectors in the short-term. Taking advantage of an export market that focuses on high-end wealthy markets and rapidly developing countries presents an opportunity for New Zealand in the medium to long-term. To take advantage of such opportunities, investment is required in areas such as innovation, improved product offerings and market development (Ministry of Agriculture and Forestry 2009).

Summary Points

- Pastoral farming, particularly dairy, is a significant employer in the Kaipara catchment and will continue to do so (Wilson *et al.* 2006). Employment and production will not increase as most occurs through productivity, which is a result of technological advances. The infrastructure for innovation does not currently exist in the region as it predominantly occurs in the Waikato region.
- The Kaipara is a resource-based economy. Wilson *et al.* (2006) believes that in order for the Kaipara Harbour region/catchment to be competitive regionally and internationally, it must increase its authenticity and assurance of quality, reputation/brand and provide leverage through technology (e.g. food technology, packaging, broadband infrastructure, access to up to date information).
- Strengths of both Northland and Rodney District to allow for sustainable socio-economic opportunities include: cultural and heritage resources, attractive and diverse physical environments; good climate; proximity to Auckland; existing Twin Coast Discovery Highway⁹ (APR Consultants 2002, Wilson *et al.* 2006).
- Norman *et al.* (2009) describes state of Rodney District economic performance:
 - Rodney District has enjoyed rapid economic growth in GDP, labour/employment and number of businesses in past ten years since 1998.
 - Most employment is within the retail and distribution sector.
 - The housing boom during 2006/07 meant that the construction sector saw the fastest employment growth in the past ten years to 2008.
 - Key sectors within Rodney District include: tourism, construction, primary (horticulture, viticulture, commercial fishing, aquaculture, dairy, quarrying), creative (publishing, arts, advertising, film, video, production, performing arts).
 - Voted "The Best Place to Live in New Zealand 2009"¹⁰

⁹ Joint venture between Destination Northland, Tourism Auckland and local community businesses throughout Northland. (APR Consultants 2002).

¹⁰ <http://www.manaakitangaawards.co.nz/>

- Hay (1999) acknowledged the importance of future sustainable utilisation of marine resources to consider not only the commercial importance but also the social and cultural context, values and aspirations. Marine resources are extremely important to Ngāti Whātua and household interviews found that 72% of respondents ate seafood at least once a week; a total of 50% ate seafood at least twice a week and 25% three times a week. Subsistence utilisation of the marine resources (fisheries, shellfish) of the Kaipara is an important issue and future consideration in socio-economic development of opportunities.



13.8 GAPS & OPPORTUNITIES TO UNDERSTAND SOCIO-ECONOMIC OPPORTUNITIES

The information sourced for this chapter pre-dates the global economic recession and credit crisis that occurred (and continues) in late 2008. Information sourced for chapter also did not predict the rapid increase in the concern for climate change impacts to the economy and environment. Considering such constraints, gaps and opportunities are identified in light of the information collected and current economic situation.

Population growth and socio-economic demographics were investigated and described for Kaipara, Whangarei and Rodney Districts. Whangarei District was included in this review because up to 55% of the total district area is inside the Kaipara catchment. There is a clear north-south split across all socio-economic trends, such as unemployment, population, income, and Maori population. This is driven by the unique position the Rodney District has on the doorstep of Auckland.

The Kaipara is a rural landscape rather than urban, with the dominance in the landscape of primary production and absence of man-made structures other than those related to primary production. The dominant economic activities include agriculture (largely dairy farming), horticulture (mainly kumara), viticulture, sand mining and quarries. Emerging industries include aquaculture, organic produce, and tourism. Support sectors such as light engineering and construction are also important to the area. The spatial socio-economic information investigated and applied across the Kaipara ecosystems, revealed that most of the Kaipara is utilised, developed and extracted in some shape and form.

Retail, manufacturing, wholesale, finance, business services and community/personal services are under-represented in the Kaipara District. Its strength currently lies in agriculture, compared to the Rodney District, which is driven by industry (mostly quarrying, construction, forestry) and then agriculture.

Investigations found that limited infrastructure (e.g. roading, rail, transport, energy, communication) was reported to be a major constraint to economic development. Integrated research, development and innovation expansion for the Kaipara Harbour and catchment region are little to non-existent.

Socio-economic opportunities for Māori appear to be encouraging in the accommodation, cafes, restaurants and cultural and recreational services. These are fast growing sector nationally, in part because of strong increase in international visitors' in recent years. Agriculture, forestry and farming is a sector that does appear to hold opportunity for Māori business in Northland but is not expected to be a high growth sector in terms of demand growth.

Strengths for sustainable socio-economic opportunities found to exist in: cultural and heritage resources; attractive and diverse physical environments; good climate; proximity to Auckland, existing Twin Coast Discovery Highway.



13.8.1 PRIORITY GAPS & OPPORTUNITIES

- **Supporting opportunities for tourism.** The New Zealand Tourism Strategy 2015 (Tourism Industry Association *et al.* n.d.) vision is:

“Tourism is valued as the leading contributor to a sustainable New Zealand economy”.

The Strategy is founded on two key values: kaitiakitanga and manaakitanga.

Presenting eco-cultural-tourism opportunities around the Kaipara ecosystems, such as through the development of cycle-ways and cultural heritage trails are supported as a promotion of a sense of place and reflects the Kaipara’s historical significance. The current draw for tourists to the Kaipara is the harbour, beaches, forests, fishing, and dune lakes. However, tourism opportunities may only benefit some townships and/or settlements because enticing tourists to the region is difficult due to the sheer expanse of the harbour. Examples such as the Kauri museum at Matakoho illustrate the potential of attracting tourists from SH1 heading north into the Kaipara. In addition, building on the Twin Coast Discovery Highway initiative may encourage tourists to explore and stay longer in the Kaipara.

- **Refocus from short-term to the medium and long-term sustainable socio-economic opportunities.** Information investigated did not present sustainable socio-economic opportunities in a global economic recession and credit crisis, coupled with a global concern to address the impacts of climate change. This economic climate has impacted on New Zealand’s agricultural and forestry sectors; both sectors provide considerable support to the Kaipara regional economy. There is also the current local and global debate around the need to shift away from the current paradigm of the growth economy towards a system that emphasises conserving natural capital where the economy is a subset of the environment.

The New Zealand dollar is assumed to remain low over the next two years and unemployment rates (which lag behind other market indicators) continue to decline; unemployment is higher than average in Northland region.

To address this barrier, particular attention should be given to the following opportunities:

1. Establishment of a Kaipara sustainable development group that advocates for appropriately suited socio-economic opportunities for the Kaipara harbour and catchment all founded on the principles of the IKHM project. For example, telecommunications and broadband; water transport and access to harbour; An opportunity to address the unbalanced demographic profile of the Kaipara community, population growth and heavy resource-based economy, is in the development of an integrated stimulus package for the Kaipara region that details a program of legislative, environmental, economic and social action; a program where the community and local economy provides labour and production – a “**social contract**”. For example, pest and weed management, waste minimisation, riparian restoration, holistic land management case studies, and cultural eco-tourism. Building partnerships across these examples are worth a SWOT (Strengths, Weaknesses, Opportunities, and Threats) investigation.

2. A Kaipara sustainable socio-economic development strategy. Development of a National Sustainable Development Strategy (NSDS) was first promoted by the United Nations in 1992 as part of Agenda 21. In this agreement New Zealand (and other member nations) first agreed to produce a NSDS. New Zealand reaffirmed this commitment in 1997 and 2002 at subsequent UN summits. New Zealand government did explore the need for a national strategy (Parliamentary Commissioner for the Environment 2002) to address what the RMA does not do in terms of sustainable development, a concept that embraces the social, environmental and economic dimensions of our lives. The NSDS did not proceed however, at the local level there has been more enthusiasm with the Auckland Growth Forum Sustainable Framework (Auckland Regional Growth Forum 2007) and Whangarei District Sustainable Futures 30/50 Strategy¹¹.

A strategy for Kaipara would have the following key components:

1. Guided by the IKHM project principles and vision and will promote integrated long-term thinking, leadership and capacity-building enabling government, iwi/hapū and communities to effectively explore and manage risks and opportunities over the next 50 years.
 2. Goals and objectives
 3. Recognition of the spatial scale of environmental processes and problems operating across Kaipara ecosystems will be key to implementation of environmental sustainability.
 4. Offer 2-3 different future scenarios in the next 50 years.
 5. Promote integration by informing the community and council planning processes, of best practice and appropriate approaches to development to protect Kaipara Harbour. The strategy would add value by promoting a consistent approach across the whole Kaipara Harbour and catchment. The Hauraki Gulf Forum has adopted a similar initiative.
 6. Using up to date knowledge and innovation.
 7. Monitoring of sustainable development indicators, including natural capital and the ecosystem services and functions it provides (e.g. GPI).
- **Limited socio-economic environmental partnerships.** Building on the point above, socio-economic environmental partnerships should be investigated. For example, to deliver on the IKHM project objectives and vision, the development of a 'Centre of Excellence in Land-Sea Catchment Restoration Practices' that specialises in the research and development of innovative techniques and practices to restore catchment ecosystems. Farms purchased will demonstrate practical examples of new innovative techniques and understanding of holistic land management practices leading in the enhancement of biodiversity, fisheries, and kaitiakitanga; presenting opportunities for co-

¹¹ <http://www.wdc.govt.nz/xml/bs.aspx?fn=/resources/12637/sustainable-home.html>

partnerships and sustainable socio-economic opportunities. Such an initiative will also encourage utilisation of local labour and production having flow-on effects to the local rural economy and community.

Indirect flow-on effects of the 'Centre' would include, for example: protection of waterways, protection of clean, green brand; market access; enhanced tourism (e.g. fishing); and reduced flooding and drought. Social benefits would include, for example: improved aesthetics; recreational opportunities; restoration of Mauri and Maori values of water; investment in rural communities; investment in New Zealand industry (plant nurseries, fencing); jobs and job training; innovation development; and education facilities.

Through co-partnerships with Regional and Local Councils, the 'Centre of Excellence' can deliver on water quality monitoring, freshwater ecosystem monitoring, pest and weed management and restoration of riparian vegetation along waterways, wetlands, lakes and gullies.



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