



THE WAIKATO PLAN

Waikato : he reo kotahi
Waikato : one voice

Socioeconomic Deprivation in the Waikato Region –

Using the Index of Multiple Deprivation to
understand drivers of deprivation

Waikato Plan

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Executive Summary

This background research document will help inform the debate on deprivation. Socio-economic deprivation and associated poverty is a challenge that we face as a country. The Waikato Region is not immune to this issue. It is important that as a region we understand the deprivation that we experience to:

- help the Waikato Plan to determine our action priorities and areas to target
- promote more effective engagement between the Waikato Plan and various community agencies in the Waikato Region
- help local governments in the Waikato Region to further understand their communities to address their own unique mix of deprivation drivers
- harness government funding opportunities to help address inequalities.

This report explores deprivation across the Waikato Region using two indices – the New Zealand Deprivation Index and the Index of Multiple Deprivation. The two indices provide different pictures of conditions in the Waikato, yet both indices demonstrate that the level of socio-economic deprivation in the Waikato Region is slightly worse than overall New Zealand.

Firstly, the **New Zealand Deprivation Index (NZDep)** has shown that the Waikato Region is not experiencing the highest deprivation in New Zealand but is still amongst the six regions with the most deprivation challenges. Over the period 1991 – 2013:

- overall deprivation has improved at a sub-regional level for seven districts within the Waikato
- three districts either saw no change or deprivation deepened
- two Waikato districts are among the 12 most deprived districts in the North Island with more than 40 per cent of their population living in areas of NZDep quintile 5 deprivation
- three districts have over 68 per cent of their population in NZDep quintile 4 or 5.

Secondly, the **Index of Multiple Deprivation (IMD)** provides the ability to explore a wider range of deprivation drivers at a small area level within each district. Unlike the NZDep which is derived from census data, the IMD uses routinely-collected data from government departments as well as the census. This allows the IMD to use indicators across more domains than the NZDep and includes health and crime indicators in addition to the more traditional employment, income, education, housing, and access indicators.

The IMD shows that the Waikato Region has higher than average overall IMD deprivation, with 48.1 per cent of its data zones either in quintile 4 or 5. When the Waikato Region is compared to the rest of New Zealand on individual domains, only housing ranks better than the NZ median. All other domains are worse than the NZ median with education the most prevalent type of deprivation in the Waikato. Overall the strongest drivers of deprivation in the Waikato Region are education, income and access deprivation.

This report also presents profiles on each district within the Waikato Region. The analysis shows that the Waikato Region is made up of very disparate communities. At the sub-regional level, no two communities have the same mix of drivers and some experience significant deprivation.

District level data can mask specific deprivation at the community level. On specific domains, parts of the Waikato Region rank as having very high deprivation. For instance, Hamilton has the 2nd most deprived data zone in the New Zealand for income (out of a total of 5958 data zones across New Zealand). Hamilton also has the 2nd most deprived data zone for crime in the country and the 3rd for health. Waharoa, in Matamata-Piako District has the 2nd most deprived data zone for education but the district has low overall deprivation. Tokoroa has the 10th most deprived data zone for employment in the country and is located in a district of very high overall deprivation.

Overall, this report shows that it is simplistic to assess deprivation at a regional level. Each data zone has a different mix of drivers across each district and within each community. This has policy implications for considering the use of place-based policies versus blanket policies to improve social outcomes. This research suggests that central government, districts, social providers and others will need to consider the different drivers in each locality and how the underlying drivers work together to deepen deprivation in their communities. Interventions will need to be targeted to address the unique factors in each community.

1. Introduction

Socio-economic deprivation and associated poverty is a challenge that we face as a country. It is important that as a region we understand the deprivation that we experience to:

- help the Waikato Plan to determine our action priorities and areas to target
- promote more effective engagement between the Waikato Plan and various community agencies in the Waikato
- harness government funding opportunities to help address inequalities
- help local governments in the Waikato Region to further understand their communities.

This report is designed as a background research document to help inform the debate on deprivation. An extensive Social Wellbeing Report was produced in 2013 for the development of the Waikato Plan¹. This deprivation report does not intend to replicate that report but rather provides additional context to the socio-economic landscape in the Waikato Region.

Purpose

The purpose of this report is to outline:

- deprivation in the Waikato Region
- the Waikato's comparative position amongst all regions in New Zealand
- how deprivation has changed over time in the Region
- deprivation across each district within the Waikato
- the underlying drivers of deprivation in each district.

2. What is socio-economic deprivation?

A working definition

Socio-economic deprivation is defined as “falling below the adequate standard of living according to the majority of a particular society. Those who are identified as ‘deprived’ experience more hardships than their peers and have insufficient access to resources, such as food, education and health care.”²

Higher levels of socio-economic deprivation are associated with worse health³. There are also connections between socioeconomic deprivation and environmental risk. In general, people who live in more deprived are more susceptible to environmental risks. They may also have less capacity

¹ McKenzie-Norton, E. (2013). Spatial Plan Project – Social Wellbeing Report.
<http://www.waikatoplan.co.nz/assets/Waikato-Plan/About-the-plan/Our-people-files/6-c-Social-Wellbeing-Report-December-2013.pdf>

² Robinson, et al. (2017). Socio-economic deprivation and non-suicidal self-injury in New Zealand adolescents: The mediating role of depression and anxiety. New Zealand Journal of Psychology Vol. 46, No. 3. p126.

³ Mare, D.C., Mawson, P., and Timmins, J. (2001). Deprivation in New Zealand: Regional patterns and changes, Treasury Working Paper 01/09.

to cope with the effects of environmental risks, and fewer resources to protect themselves from environmental hazards⁴.

Rural-urban status and deprivation

Deprivation may have differential impact in rural areas compared to urban areas. Three types of deprivation have been recognised as contributing to this:

- resource deprivation (low income, housing)
- opportunity deprivation (lack of availability of services such as health, recreation)
- mobility deprivation (higher transport costs, inaccessibility of jobs, services, facilities)⁵.

Resource deprivation may be present in urban and rural areas, but opportunity and mobility deprivation relate specifically to geography. In addition, the degrees of resource deprivation, opportunity and mobility deprivation may vary between populations within an area type.⁶

3. Deprivation indices

History of measuring deprivation

The New Zealand Index of Deprivation (NZDep) was developed after the 1991 Census. It was conceived with three purposes in mind: resource allocation, community advocacy and research. NZDep used national Census data, and was based on international deprivation research. For the past 20 years, the NZDep has been the universal measure of area-based social circumstances for New Zealand and often the key social determinant used in population health and social research.⁷

In 2017, a new deprivation measure was released – the index of Multiple Deprivation (IMD) which was developed with Health Research Council funding by the University of Auckland's School of Population Health. The IMD provides depth of understanding in terms of the drivers of deprivation⁸. The IMD are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand but help to provide a detailed understanding of each area's drivers.

This report analyses the outcomes of both indices.

⁴ Hales S, Black W, Skelly C, Salmond C, Weinstein P. (2003). Social deprivation and the public health risks of community drinking water supplies in New Zealand. *J Epidemiol Community Health* 57:581-583.

<http://www.ehinz.ac.nz/indicators/population-information/socioeconomic-deprivation-profile/>

⁵ Robson B, Purdie G, Cormack, D. (2010). *Unequal Impact II: Māori and Non-Māori Cancer Statistics by Deprivation and Rural–Urban Status, 2002–2006*. Wellington: Ministry of Health.

⁶ Robson B, Purdie G, Cormack, D. (2010). *Unequal Impact II: Māori and Non-Māori Cancer Statistics by Deprivation and Rural–Urban Status, 2002–2006*. Wellington: Ministry of Health.

⁷ Exeter DJ, Zhao J, Crengle S, Lee A, Browne, M. (2017). *The New Zealand Indices of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand*.

⁸ August 8, 2017 <https://www.stuff.co.nz/national/95481164/a-new-way-to-measure-deprivation-in-new-zealand-might-help-those-worst-affected>

Comparison of the Indices

The NZDep and IMD overlap on some dimensions of deprivation but vary significantly on others. The NZDep has 9 indicators across 8 dimensions derived from census data. The IMD has 28 indicators across 7 domains. The IMD uses routinely collected data from government departments as well as census data. Note that both indices use census data so there is no information later than 2013. Table 1 compares the indicators of both indices.

Table 1: Comparison of New Zealand Deprivation Index 2013 and the Index of Multiple Deprivation 2013

Domain of deprivation	NZ Deprivation Index indicators	IMD description of variable (in order of decreasing weight in the index)
Employment	People aged 18-64 unemployed	No. of working-age people receiving the Unemployment Benefit No. of working-age people receiving the Sickness Benefit
Income	People aged 18-64 receiving a means tested benefit People living in equivalised* households with income below an income threshold	Weekly Working for Families payments (\$ per 1000 population) Weekly payments (\$ per 1000 population) in the form of income-related benefits
Health	*	Standardised Mortality Ratio Hospitalisations related to selected infectious diseases Hospitalisations related to selected respiratory diseases Emergency admissions to hospital People registered as having selected cancers
Education	People aged 18-64 without any qualifications	School leavers <17 years old School leavers without NCEA L2 School leavers not enrolling into tertiary studies Working-age people without qualifications Youth not in Education Employment or Training
Housing	People living in equivalised households below a bedroom occupancy threshold People not living in own home	No. of persons in households that are rented No. of persons in households that are overcrowded
Crime	*	Victimisation rates for: <ul style="list-style-type: none"> • Homicide and Related Offences • Assault • Sexual Assault • Abduction and Kidnapping • Robbery, Extortion and Related Offences • Unlawful Entry with Intent/Burglary, Break and Enter • Theft and Related Offences
Access	People with no access to a car People aged <65 with no access to the Internet at home	Distance to 3 nearest: <ul style="list-style-type: none"> • GPs or Accident and Medical • Supermarkets • Service stations • Primary or intermediate Schools • Early childhood education centres
Support	People aged <65 living in a single parent family	*

* The New Zealand Index of Deprivation does not contain indicators that cover health and crime categories. The Index of Multiple Deprivation does not contain indicators that cover the support category.

It is important to note that deprivation is a relative measure. Therefore 10 per cent of areas will always fall into the most deprived across the whole of New Zealand irrespective of the overall wealth of the country.

For further details on the methodology used in the two indices see Appendix 1.

The importance for policy and funding

The NZDep and the new IMD can be used for measurement and interpretation of socio-economic status of communities for:

- application in funding formulas for extra resources for community-based services
- needs assessment
- resource allocation
- research
- advocacy^{9,10}.

⁹ Atkinson, J., Salmond, C., and Crampton, P. (2014). NZDEP2013 Index of Deprivation. Department of Public Health, University of Otago, Wellington; Division of Health Sciences, University of Otago.

¹⁰ .idcommunity - <http://profile.idnz.co.nz/thames-coromandel/deprivation-index?WebID=100>

4. Socio-economic deprivation across the Waikato Region – NZDep

Section 4 presents a comparative analysis of deprivation in the Waikato Region using just the New Zealand Deprivation Index (NZDep).

In this section:

- comparison of the Waikato Region with other regions in New Zealand - 2013
- comparison with other regions over the period 1991-2013
- comparison between different districts within the Waikato Region – 2013
- comparison between different districts within the Waikato Region over the period - 1991-2013

How to interpret the data

The NZDep ranks small areas across New Zealand from least deprived to most deprived. NZDep can be displayed as deciles. The deciles rank from 1 to 10. NZDep 9 and 10 equate to high deprivation or low socio-economic status. A score of NZDep 1 and 2 is an area of low deprivation and relates to high socio-economic status.

At a national-level there are equal numbers of households in each of the ten decile categories but at a sub-national level there can be clusters of high deprivation areas in a region or district.

NZDep can also be presented as quintiles for ease of display. A NZDep quintile of 5 will contain the areas that are ranked as NZDep 9 and 10. A NZ Dep quintile of 4 will contain the areas that are ranked as NZDep 7 and 8 and so on.

Comparison with other regions

Figure 1 compares 16 regions in New Zealand. The Waikato Region ranks 11th out of the 16 regions with a NZDep overall ranking of 5.7 in 2013. Canterbury is the least deprived and Gisborne the most deprived. Waikato Region has a higher overall deprivation than the West Coast but is less than five other areas.

Figure 1: Comparison of Deprivation Scores across all regions 2013 ¹¹

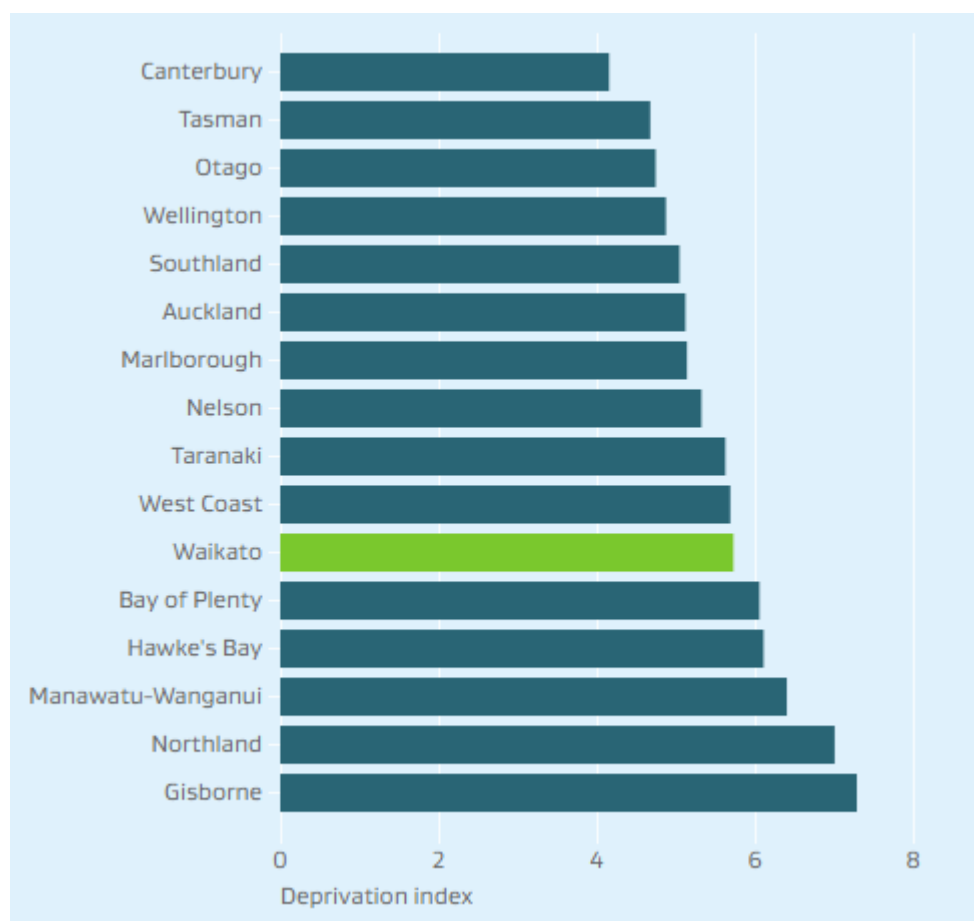


Table 2 shows how the deprivation scores have changed over the period 1991 to 2013. These are ranked from the least deprived to the most deprived based on the end point in 2013. It is important to note that NZDep2013 can not be used to look at changes in absolute deprivation over time as 10% of areas will always be the most deprived, relative to other areas in New Zealand. The indicators used to generate the index may also change over time, depending on their relation to deprivation¹². Therefore the following graphs must be considered only generally.

¹¹ Data for the comparison section is sourced from Regional Economic Activity Web Tool – Deprivation index of New Zealand <http://webrear.mbie.govt.nz/theme/deprivation-index/map/timeseries/2013/waikato?accessedvia=waikato&areatype=nz&bailiwick=WyJoYW1pbHRvbiIsdHJ1ZSx0cnVILHRydWVd&right-transform=absolute>

¹² Atkinson J., Salmond C. and Crampton P. (2014). NZDep2013 Index of Deprivation. Dunedin: University of Otago.

Overall, deprivation has improved over most of the regions in the country from 1991, with the exception of Gisborne. In some areas deprivation has dropped quite markedly over the period.

Table 2: Comparison of Deprivation Scores across all regions from 1991-2013

	1991	1996	2001	2006	2013	Diff	Change
Canterbury	6.4	5.7	4.4	4.4	4.2	2.2	+++
Tasman	7.3	6.2	4.8	4.6	4.7	2.6	+++
Otago	6.8	6.0	4.7	4.6	4.7	2.1	+++
Wellington	5.9	5.8	4.7	4.8	4.9	1.0	+
Southland	6.3	6.0	4.8	4.9	5.0	1.3	++
Auckland	6.4	6.0	5.2	5.3	5.1	1.3	++
Marlborough	6.8	6.0	4.8	4.8	5.1	1.7	++
Nelson	7.1	6.3	5.3	5.6	5.3	1.8	++
Taranaki	7.1	6.4	5.4	5.5	5.6	1.5	++
West Coast	8.1	7.3	6.1	5.8	5.7	2.4	+++
Waikato	6.8	6.8	5.4	5.4	5.7	1.1	++
Bay of Plenty	7.2	7.0	5.7	5.7	6.1	1.1	++
Hawke's Bay	6.7	7.2	5.9	5.7	6.1	0.6	+
Manawatu-Wanganui	6.9	6.8	5.6	6.0	6.4	0.5	+
Northland	7.4	7.6	6.6	6.3	7.0	0.4	+
Gisborne	6.7	7.9	7.0	7.2	7.3	-0.6	-

Figure 2 shows that that for most regions there was an increase in deprivation in 1996 and a lowering again in 2001 before a general rise to 2013 for most areas that did not reach the height of the 1991 level. This report does not attempt to identify the reasons for the changes in deprivation across this period.

The West Coast has experienced the most significant drop in overall deprivation. Gisborne has experienced the worst overall deprivation with Northland following closely.

Figure 2: Comparison of Deprivation Scores across all regions 1991 – 2013

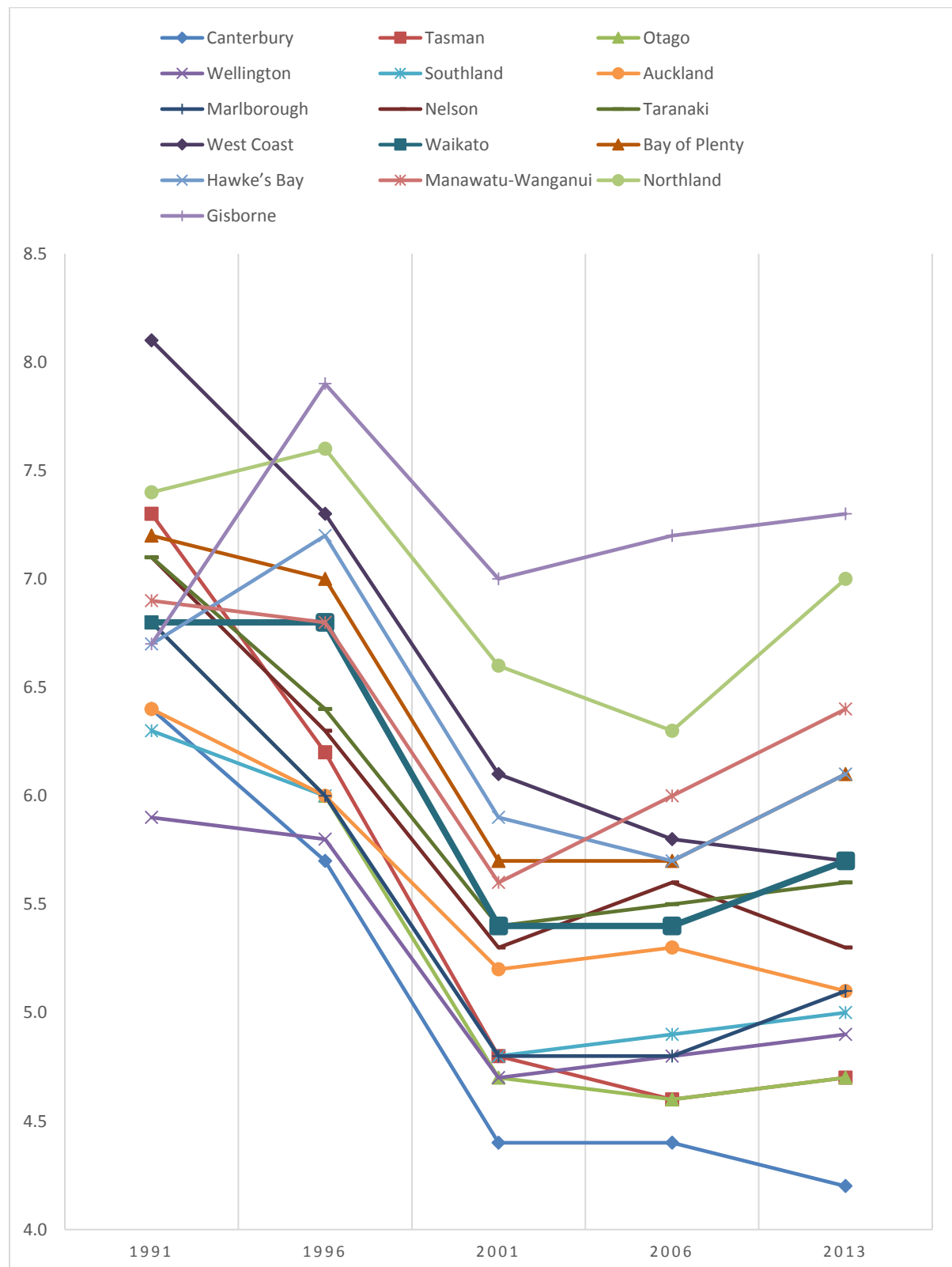
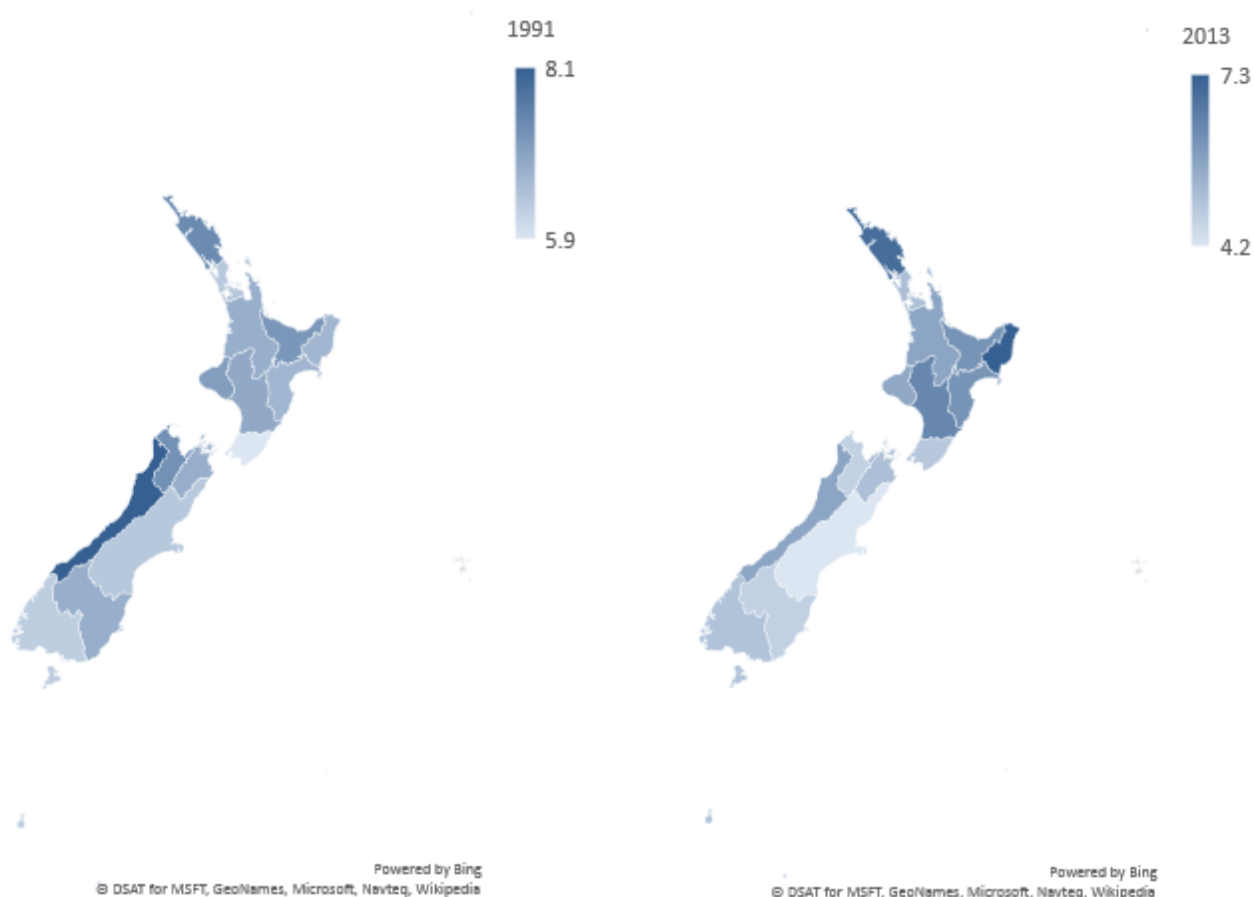


Figure 3 shows the spatial distribution of overall deprivation at a region level. Deprivation across the South Island has improved since 1991. The North Island has a greater level of overall deprivation than the South Island and in some parts as deepened.

Figure 3: Map of comparison of Deprivation Scores across all regions 1991 and 2013

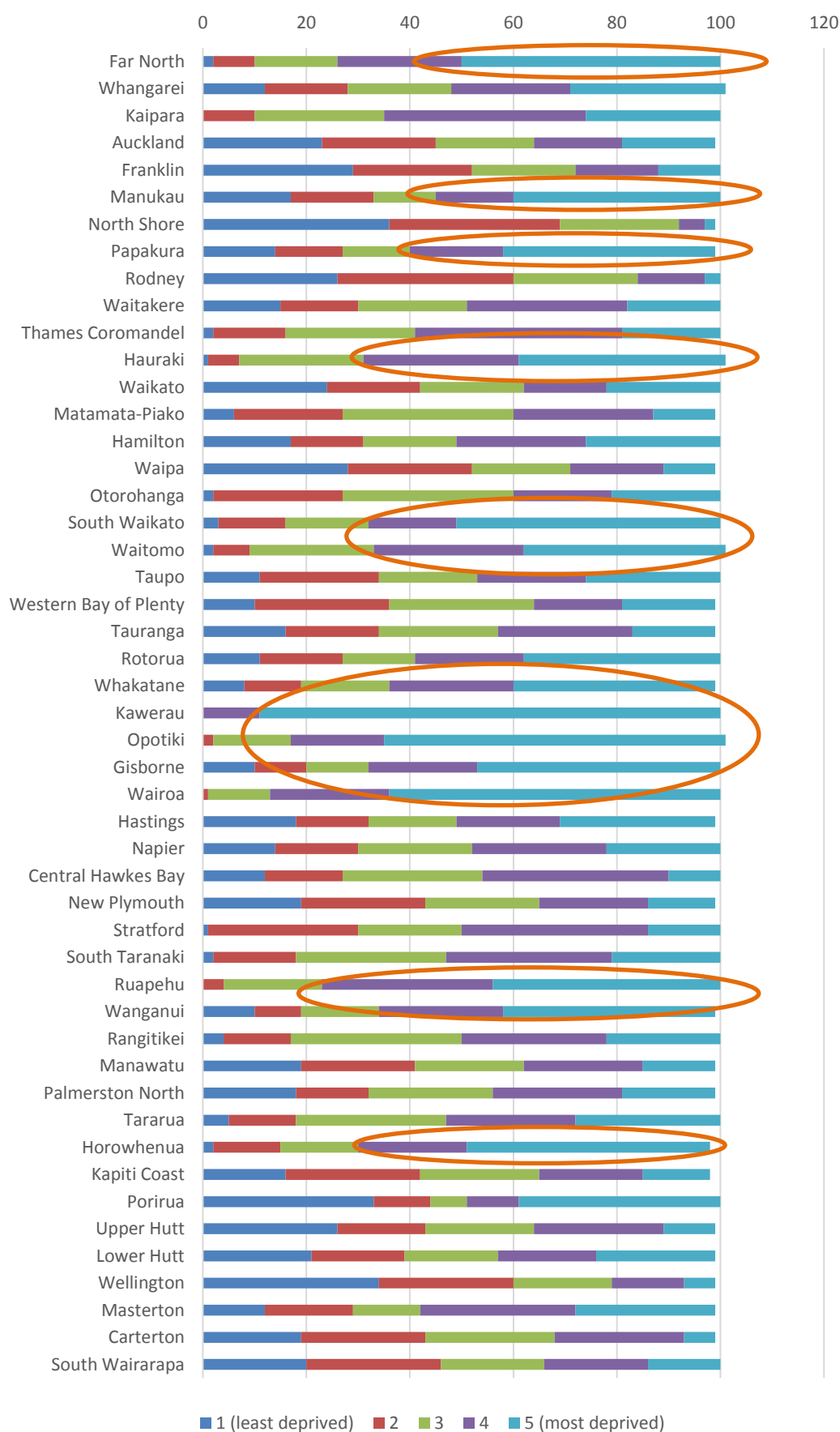


Most deprived districts in the North Island

Figure 4 shows the percentage of the population living in each NZ deprivation quintile across the North Island districts. This figure shows the districts that have the most population living in high levels of deprivation. Two Waikato districts feature in the 12 most deprived districts in the North Island. The most deprived districts by percentage of the district's population living in the NZDep quintile 5 areas are:

- Bay of Plenty - Kawerau (89%)
- Bay of Plenty - Opotiki (66%)
- Hawkes Bay - Wairoa (64%)
- **Waikato - South Waikato (51%)**
- Northland - Far North (50%)
- Gisborne - Gisborne (47%)
- Manawatu-Wanganui - Horowhenua (47%)
- Manawatu-Wanganui - Ruapehu (44%)
- Auckland - Papakura (41%)
- Auckland - Wanganui (41%)
- Auckland - Manukau (40%)
- **Waikato - Hauraki (40%)**

Figure 4: Population living in each NZ Deprivation quintile across the North Island 2013



Comparison over the Waikato Region

There is significant variation in socio-economic deprivation within the Waikato Region. The least deprived territorial authority is Waipa District (overall NZDep 4.6 - 2013) and the most deprived is South Waikato District (overall NZDep 7.7 - 2013). Note that the NZ Dep can only be considered generally across the time period as changes have been made to indicators at various points.

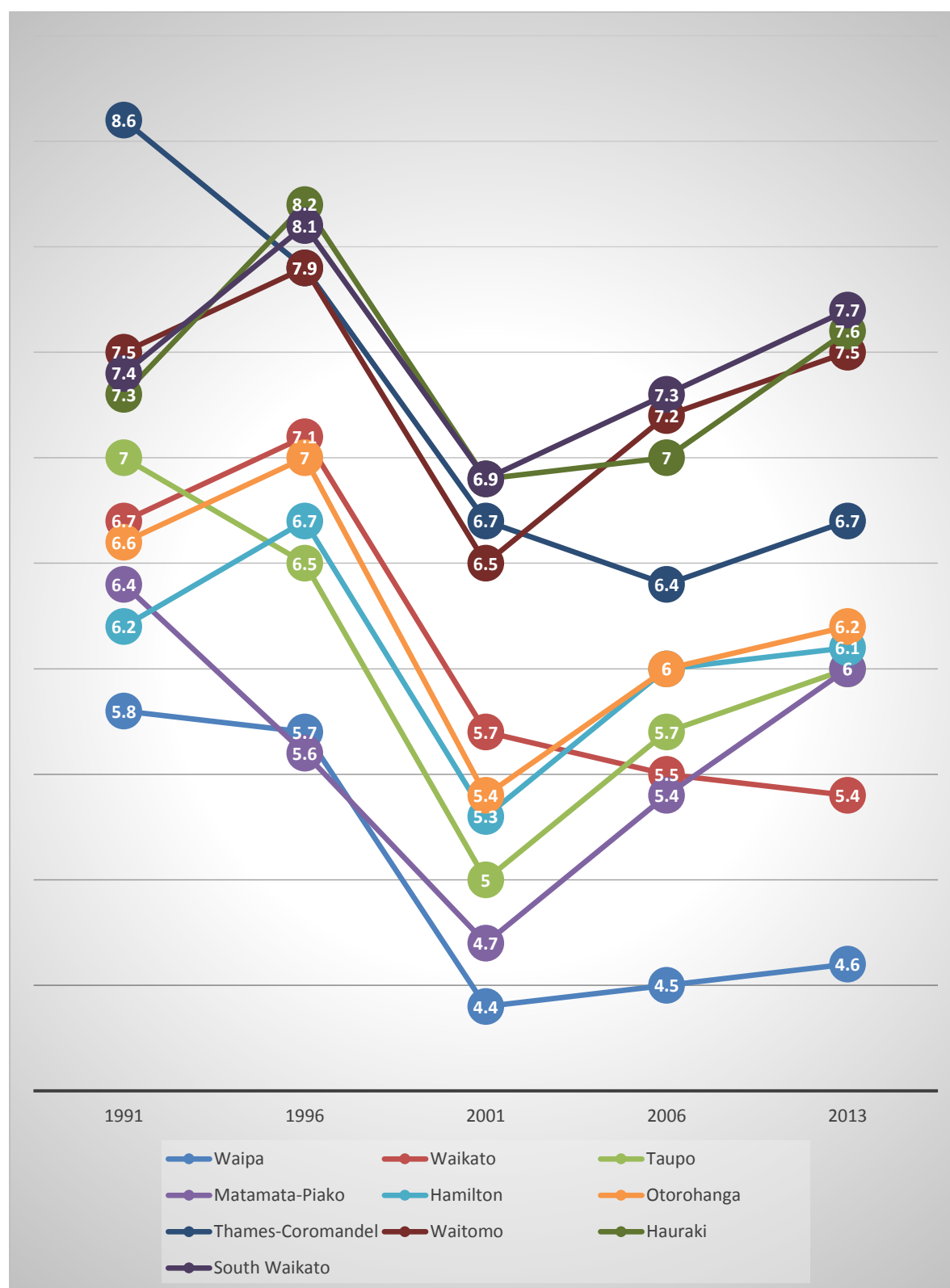
Table 3 shows that Waipa is the least deprived and South Waikato the most deprived territorial authorities. In most cases deprivation has improved across the territories since 1991 except for Hauraki, South Waikato and Waitomo. Thames-Coromandel has had the most significant improvement in overall deprivation since 1991.

Table 3: Comparison of overall deprivation scores across the districts in the Waikato Region from 1991-2013

	1991	1996	2001	2006	2013	Diff – 1991 to 2013	Change
Waipa	5.8	5.7	4.4	4.5	4.6	1.2	++
Waikato	6.7	7.1	5.7	5.5	5.4	1.3	++
Taupo	7.0	6.5	5.0	5.7	6.0	1.0	+
Matamata-Piako	6.4	5.6	4.7	5.4	6.0	0.4	+
Hamilton	6.2	6.7	5.3	6.0	6.1	0.1	+
Otorohanga	6.6	7.0	5.4	6.0	6.2	0.4	+
Thames-Coromandel	8.6	7.9	6.7	6.4	6.7	1.9	++
Waitomo	7.5	7.9	6.5	7.2	7.5	0.0	
Hauraki	7.3	8.2	6.9	7.0	7.6	-0.3	-
South Waikato	7.4	8.1	6.9	7.3	7.7	-0.3	-

Figure 5 shows that that for most districts there was an increase in deprivation in 1996 and a lowering again in 2001 before a general rise to 2013 for most areas that did not reach the height of the 1991 level. This report does not attempt to identify the reasons for the changes in deprivation across this period. Significant changes in government social and economic policy, geopolitics and economic cycles are likely to have a factor in the changes over time.

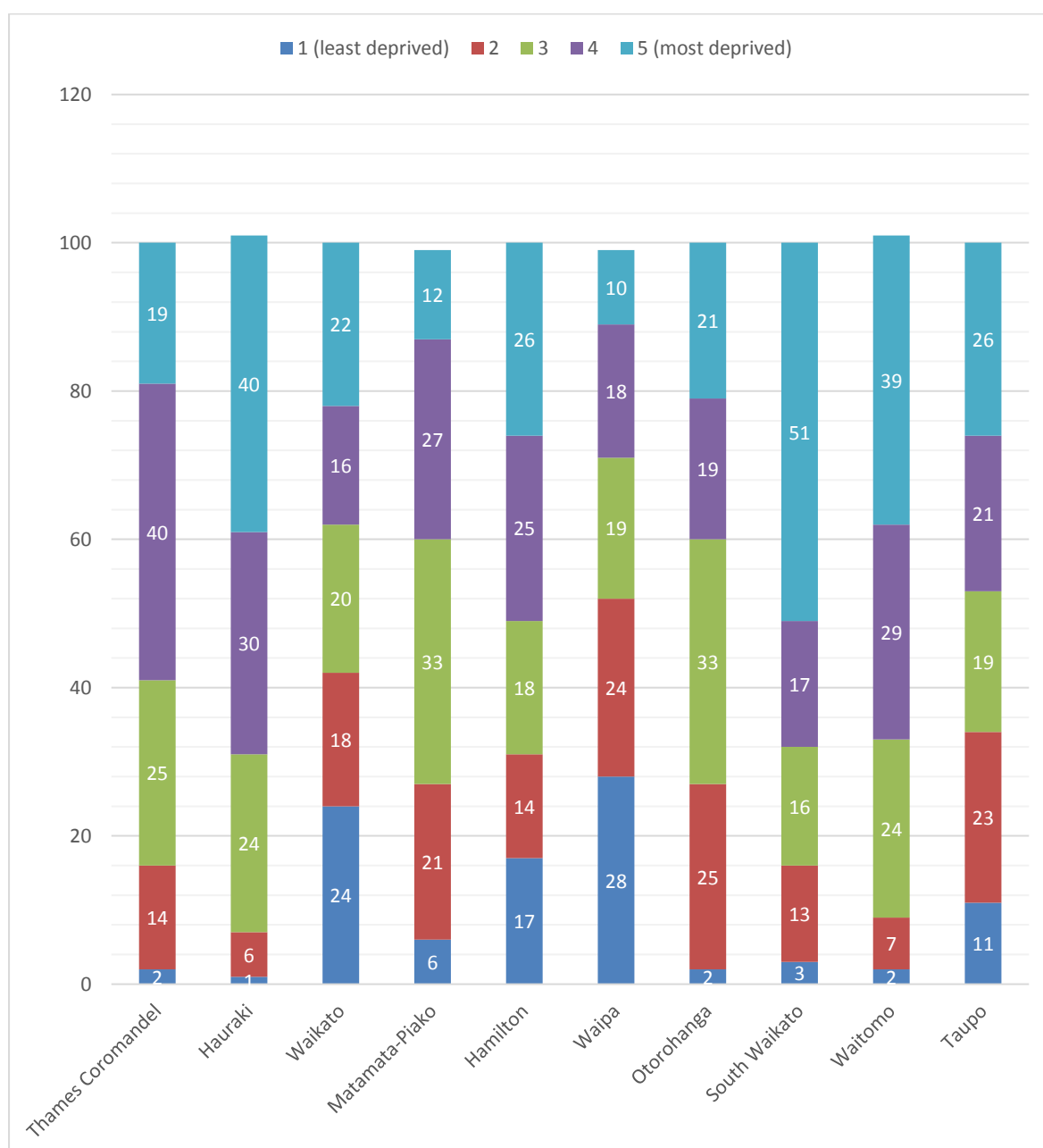
Figure 5: Comparison of NZ Deprivation Scores across Waikato districts 1991 - 2013



Deprivation as a proportion of district population

Figure 6 shows the deprivation profiles of different territorial authorities, based on the NZDep 2013.¹³ A total of 70 per cent of the Hauraki population are living in either deprivation 4 or 5 quintiles. South Waikato and Waitomo follow with 68 per cent of their population in NZDep 4 or 5. Thames-Coromandel and Hamilton are 59 per cent and 51 per cent respectively. However South Waikato has the highest percentage of people living in NZDep 5 – 51 per cent.

Figure 6: Percentage of population living in each deprivation quintile by district – NZDep 2013



¹³ Data for Figure 6 is sourced from <http://www.ehinz.ac.nz/indicators/population-information/socioeconomic-deprivation-profile/> - Massey University – Environmental Health Indicators New Zealand

5. Index of Multiple Deprivation (IMD) – domain profiles

Section 5 looks at the underlying variables for each district using the NZ Index of Multiple Deprivation (IMD)¹⁴. The IMD measures deprivation at the neighbourhood level using custom-designed data zones that were specifically developed for social and health research. The IMD uses routinely-collected data from government departments, census data and methods comparable to current international deprivation indices to measure different forms of disadvantage.

Statistical analyses for this report were performed using R and Excel. The maps are available interactively from the Index of Multiple Deprivation website <https://www.fmhs.auckland.ac.nz/en/soph/about/our-departments/epidemiology-and-biostatistics/research/hgd/research-themes/imd.html>

Data zones

There are 5,958 neighbourhood-level data zones in New Zealand. The IMD data zones have an average population of 712. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Quintile 1 (Q1) represents the least deprived 20 per cent of data zones in the whole of NZ; while quintile 5 (Q5) represents the most deprived 20 per cent.

Domains

There are 28 indicators grouped into seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access to services. See Appendix 1 for specific details of the 28 indicators. The overall IMD is the combination of these seven domains, which may be used individually or in combination to explore the geography of deprivation and its association with a given health or social outcome.

Note that the percentage of people living in deprivation will be different in the IMD compared to the NZDep as they contain different underlying indicators. See Chapter 3 for a brief comparison of the two indices and Appendix 1 for the methodology.

Weighting

Each small area in a district has a different mix of each domain that makes up the overall IMD score. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. The domains are weighted when the overall IMD is calculated:

1. Employment – 28 per cent
2. Income – 28 per cent

¹⁴ The information for this section was sourced from Exeter DJ, Zhao J, Crengle S, Lee A, Browne M (2017). The New Zealand Indices of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand. PLOS ONE 12(8): e0181260. <https://doi.org/10.1371/journal.pone.0181260>

3. Health – 14 per cent
4. Education – 14 per cent
5. Housing – 9 per cent
6. Crime – 9 per cent
7. Access – 2 per cent

Literature shows that some measures are more strongly associated with deprivation/social position than others. Employment and Income have the most direct and strongest associations, while Access has the least¹⁵.

Comparison of Waikato districts overall IMD and quintiles

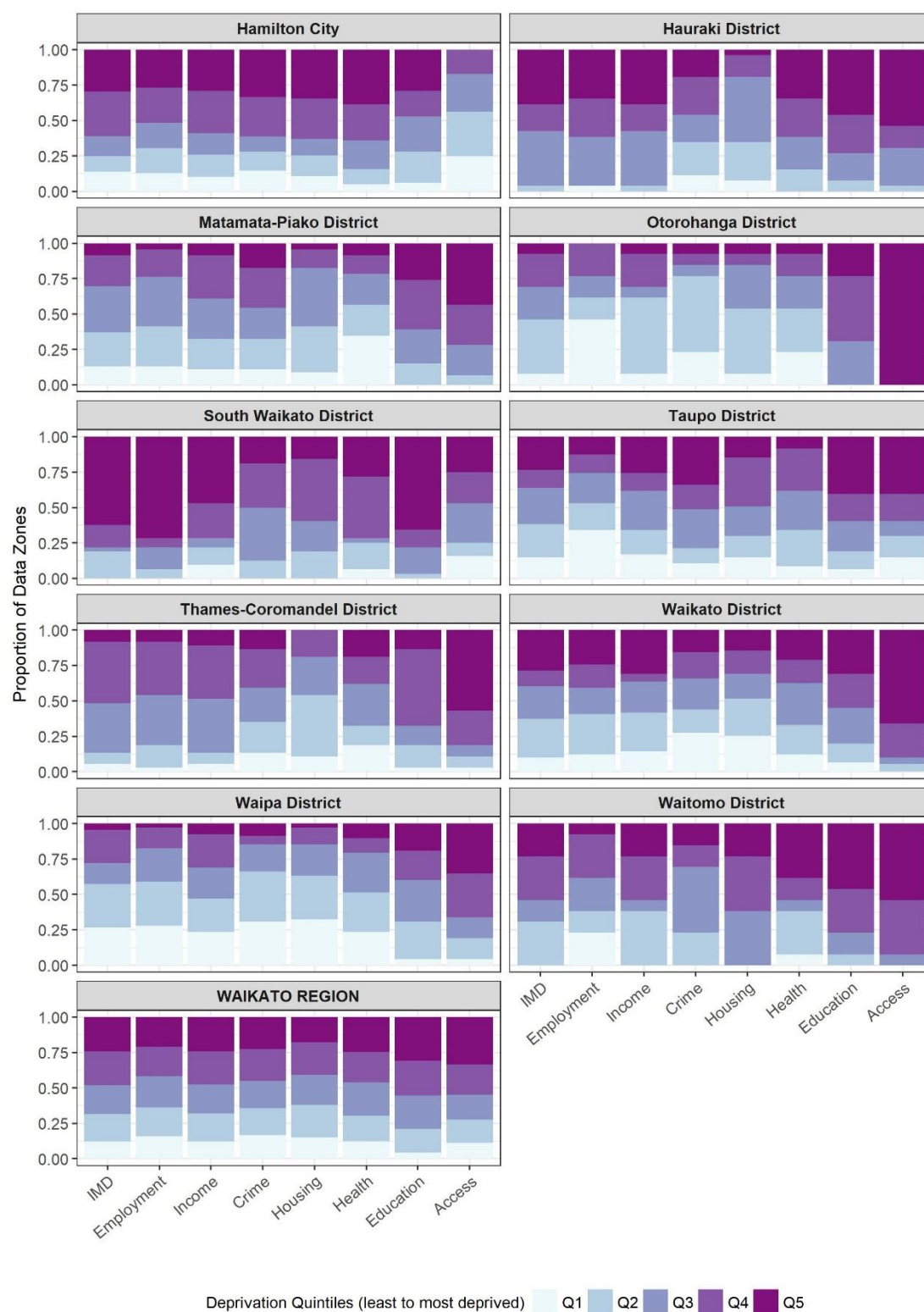
Each district has different reasons for its level of deprivation. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain. Each data zone therefore has a different profile of deprivation. For example, a data zone may rank as Q4 for overall IMD but rank as Q5 for employment, Q3 for crime and Q1 for housing.

Figure 7 shows the proportion of IMD data zones by deprivation quintile and for each domain across the districts in the Waikato Region. This figure shows the spread of deprivation across the region and the drivers of deprivation. Each district is experiencing a different mix of drivers. Some districts have a more even spread of deprivation across most deprivation domains, such as Hamilton, while others have very strong deprivation in just a couple of domains.

Waipa, Otorohanga and Matamata-Piako have the least amount of high deprivation zones – Q4 and 5. In order - South Waikato, Rotorua, Hamilton, Hauraki, Waitomo and Thames-Coromandel have the largest amount of combined Q4 and 5 zones.

¹⁵ McMillan, R. and Exeter, D. (2018). Using the Index of Multiple Deprivation (IMD) to understand the drivers of deprivation in your district. Presentation to Waikato Strategic Planners Network, Karapiro, Waipa (9 March).

Figure 7: Comparison of percentage of data zones in each district by deprivation quintile and domain – IMD 2013¹⁶



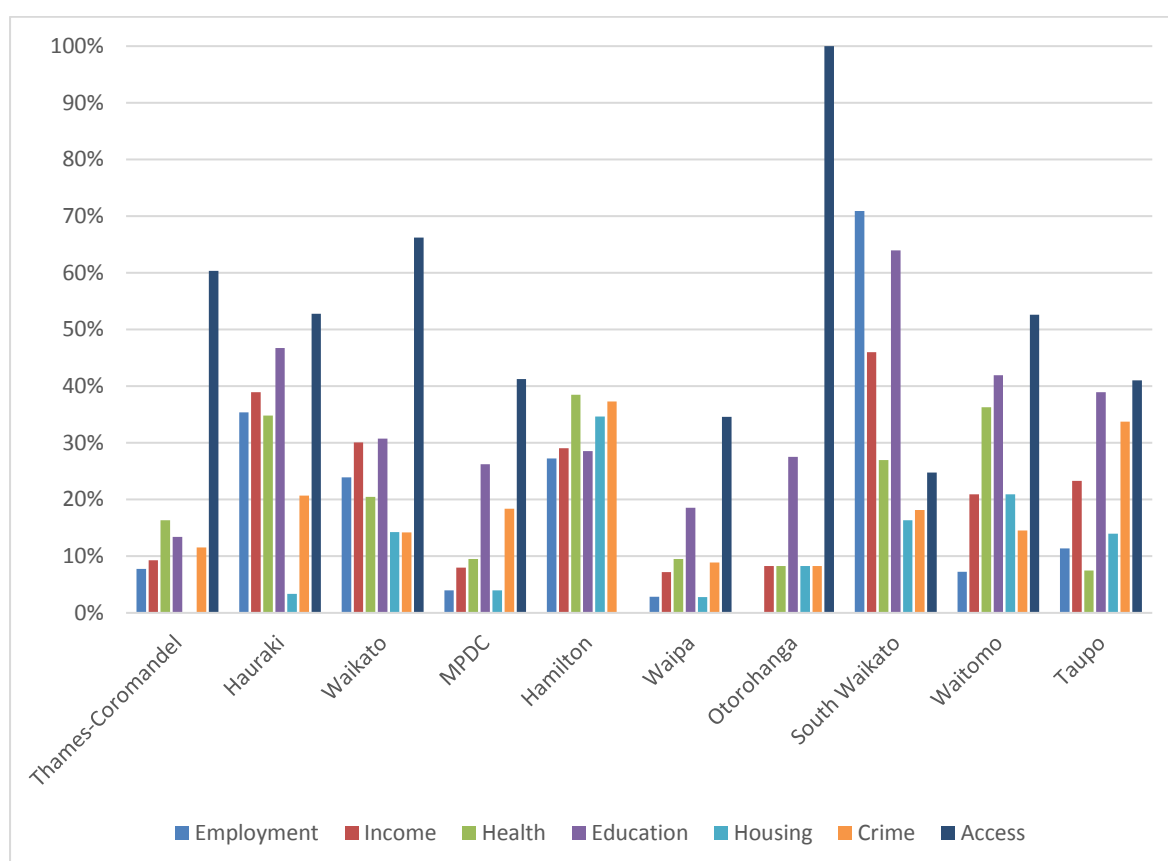
¹⁶ Exeter, D. (2018). Plot summaries provided by Daniel Exeter for the Waikato Plan.

Comparison of Waikato districts Q5 deprivation domains

This section explores in more detail the highest deprivation quintile across the domains and the districts¹⁷.

Figure 8 compares the percentage of population that are living in Q5 data zones for each domain. Access deprivation is the most obvious domain across all districts, with the exception of Hamilton. Access deprivation is also generally found only in the rural districts. Hamilton does not have any Q5 access deprivation whereas Otorohanga has 100 per cent of its population living with Q5 access deprivation. Access has a very low weighting in the IMD – (2%). This means that although many data zones within each district may have a very high access deprivation, based on distance to services, but this does not necessarily translate into a high overall IMD score unless there are other high deprivation domains.

Figure 8: Comparison of high deprivation domains across the Waikato Districts - percentage of population living in Q5 deprivation on specific domains 2013



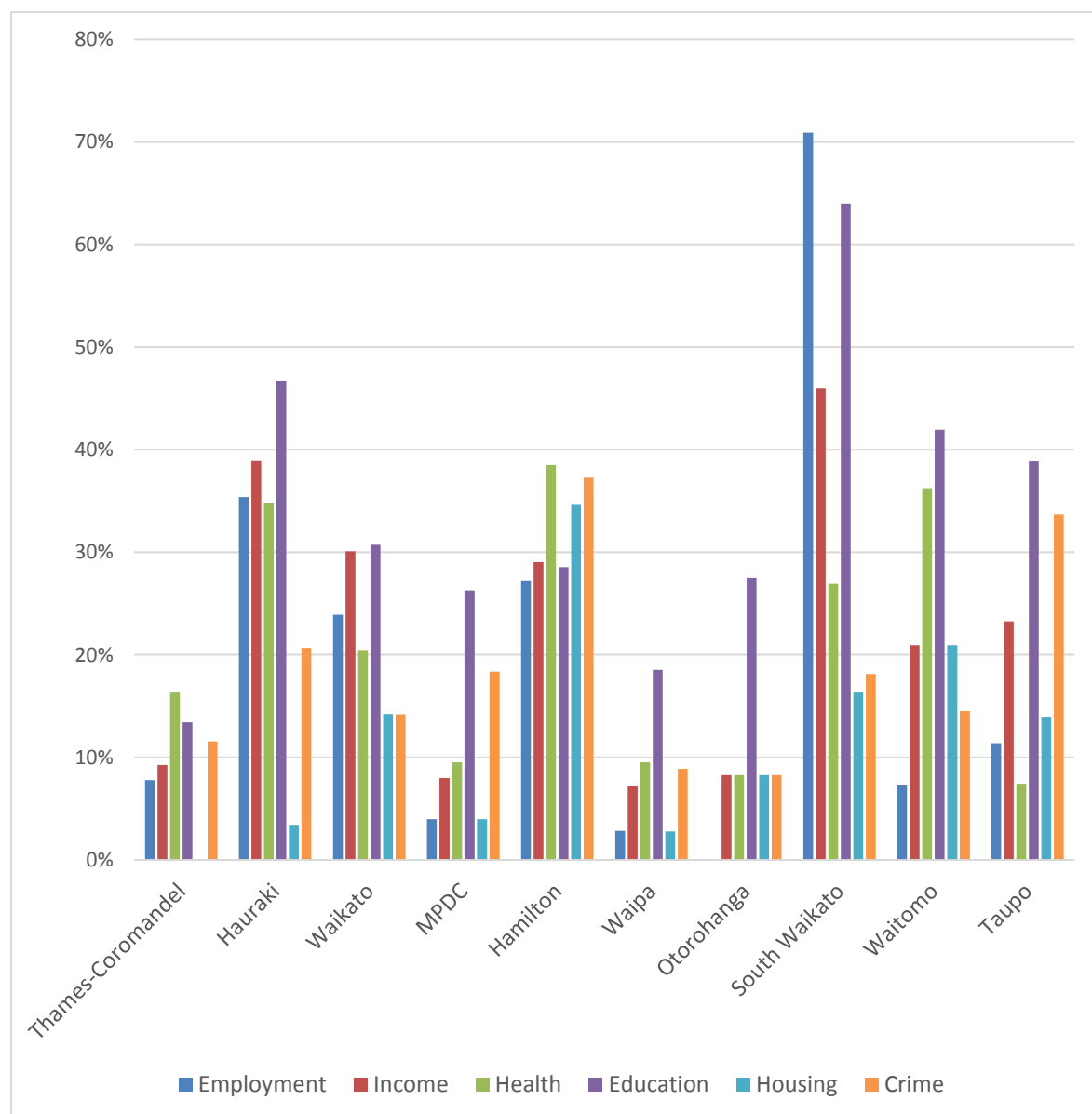
Since all of the districts have a significant number of rural data zones, with the exception of Hamilton, the access domain was removed in Figure 9 to enable the other domains to become more apparent.

¹⁷ This data for this section was sourced from data tables from the New Zealand Index of Multiple Deprivation <https://www.fmhs.auckland.ac.nz/en/soph/about/our-departments/epidemiology-and-biostatistics/research/hgd/research-themes/imd.html>

Figure 9 shows the percentage of population living in data zones that are classified as most deprived (quintile 5) with the access domain removed. Figure 9 shows the spread of deprivation across the region and is useful to show that each district is dealing with a different mix of issues. Some districts have Q5 deprivation at a high level across many domains while others only have one or two key types of deprivation which are driving their Q5 data zones. This has policy implications for considering the use of place-based policies versus blanket policies to improve social outcomes. How those underlying indicators work together will be very specific to the location and is likely to require a unique approach for each locality.

The following figures (10 – 15) break down the same material as in Figure 9 for ease of analysis.

Figure 9: Comparison of high deprivation domains across the Waikato Districts - percentage of population living in Q5 deprivation on specific domains 2013 – access removed



Domain profiles – district comparison

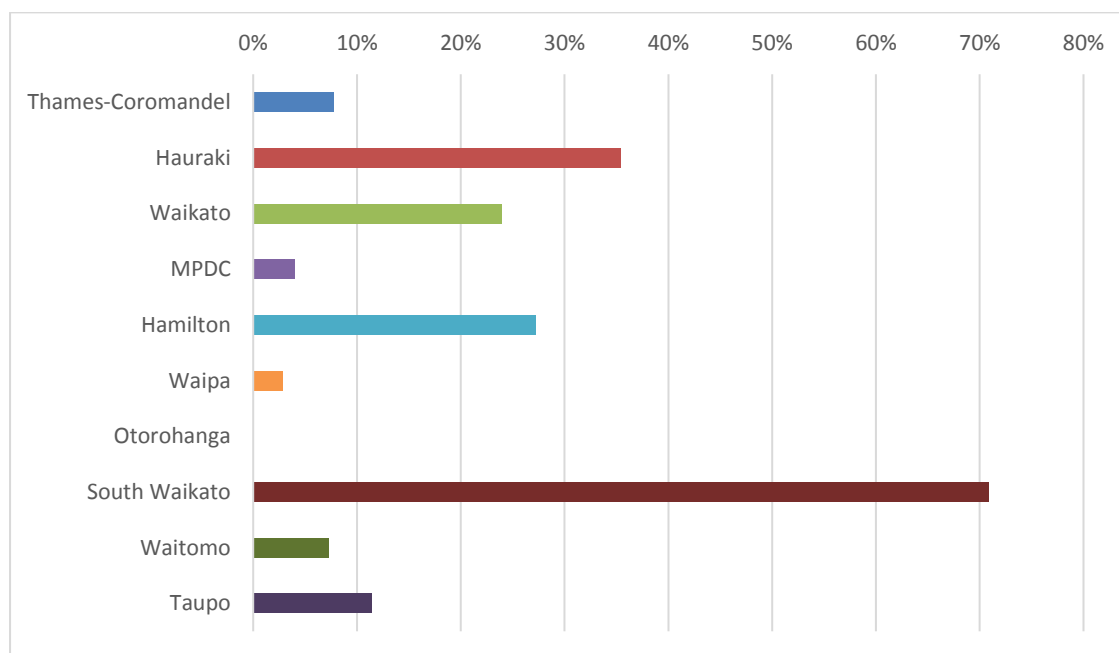
Employment

Figure 10 shows the percentage of the total district population who lives in high deprivation data zones for the employment domain. The Employment Domain reflects the proportion of working-age people who were receiving the Unemployment or Sickness Benefits in 2013¹⁸.

South Waikato has the most people living in areas with Q5 employment deprivation – 71 per cent. Hauraki follows with 35 per cent and Hamilton at 27 per cent.

Employment deprivation is present in both rural data zones and urban data zones but is much more prevalent in urban areas. Employment deprivation is a strong characteristic of the towns of Huntly, Tokoroa, Waihi, Putaruru, Paeroa, Hamilton, Mangakino, Tirau and Turangi. Employment deprivation is a lesser characteristic of Thames, Raglan, Tuakau, Te Awamutu, Otorohanga, Te Kuiti, and Taupo. Rural areas around Huntly, Meremere, Tapu experience Q5 deprivation. Tokoroa has the 10th most deprived data zone for employment in New Zealand.

Figure 10: Percentage of total district population that lives in areas that are Q5 for employment - 2013



¹⁸ This data for this section was sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). A deprivation and demographic profile of the Waikato DHB. Medical and Health Sciences, The University of Auckland, Auckland; data tables from the New Zealand Index of Multiple Deprivation <https://www.fmhs.auckland.ac.nz/en/soph/about/our-departments/epidemiology-and-biostatistics/research/hgd/research-themes/imd.html> ; and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

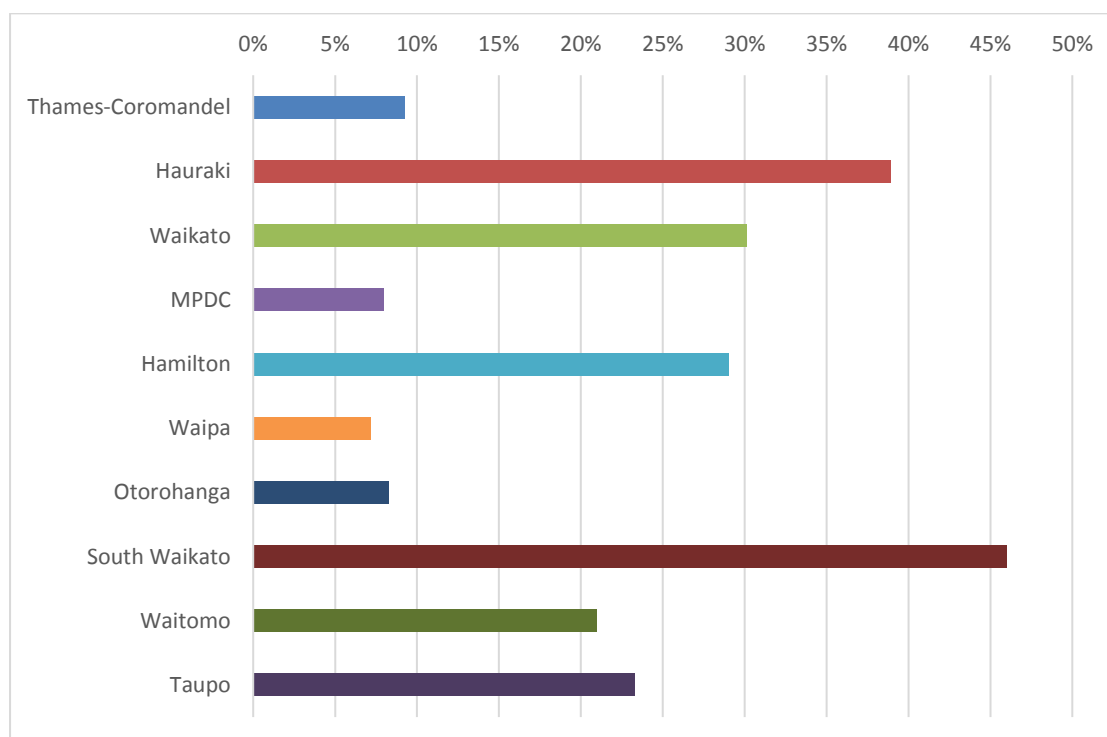
Income

Figure 11 shows the percentage of the total district population that lives in high deprivation data zones for the Income Domain. The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits.

South Waikato has the highest percentage of population living in a Q5 zone for income – 46 per cent followed by Hauraki at 39 per cent. Waikato and Hamilton are 30 per cent and 29 per cent respectively.

All of the following towns are Q5 data zones for income deprivation – Turangi, Mangakino, Ngaruawahia, and Huntly. Most of Tokoroa, Putaruru, Kihikihi, Paeroa, and Waihi are covered by Q5 zones. Parts of Te Kuiti, Otorohanga, Hamilton, Morrinsville, Tuakau, Thames, Taupo, Te Awamutu and Matamata have some Q5 zones. Hamilton also has the 2nd most deprived data zone in the New Zealand for the income domain.

Figure 11: Percentage of total district population that live in areas that are Q5 for income - 2013



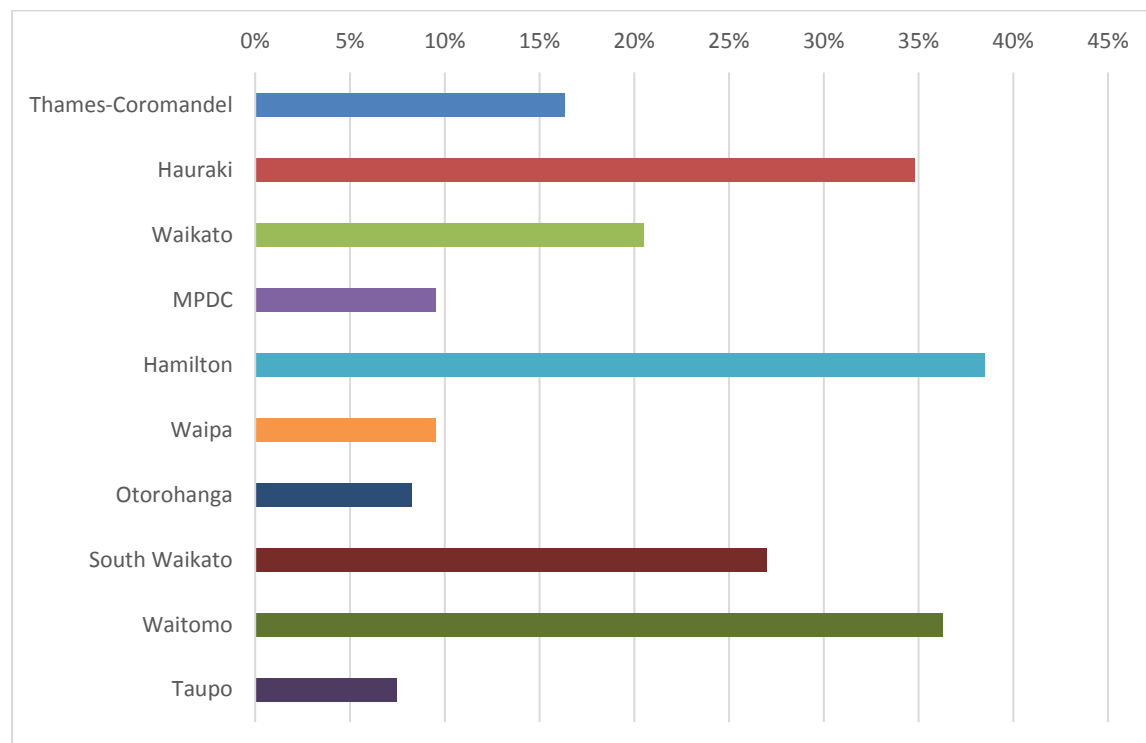
Health

Figure 12 shows the percentage of the total district population that lives in high deprivation data zones for the Health Domain. The Health Domain consists of five indicators: standard mortality ratio, acute hospitalisations related to selected infectious and selected respiratory diseases, emergency admissions to hospital, and people registered as having selected cancers.

The districts with the highest percentage of population living in the highest deprivation for health are Hamilton (38%), Waitomo (36%), and Hauraki (35%). Hamilton has the 3rd most deprived data zone for health in New Zealand.

Health deprivation is a characteristic of both rural and urban zones. There are pockets of Q5 health deprivation in most towns. Urban areas that don't feature on other deprivation domains are represented here, such as Cambridge, Ohaupo, Te Aroha and rural areas such as Kerepehi. Taupo stands out as having only one Q5 health deprivation data zones which corresponds with the small percentage of the population living in Q5 areas.

Figure 12: Percentage of total district population that live in areas that are Q5 for health - 2013



Education

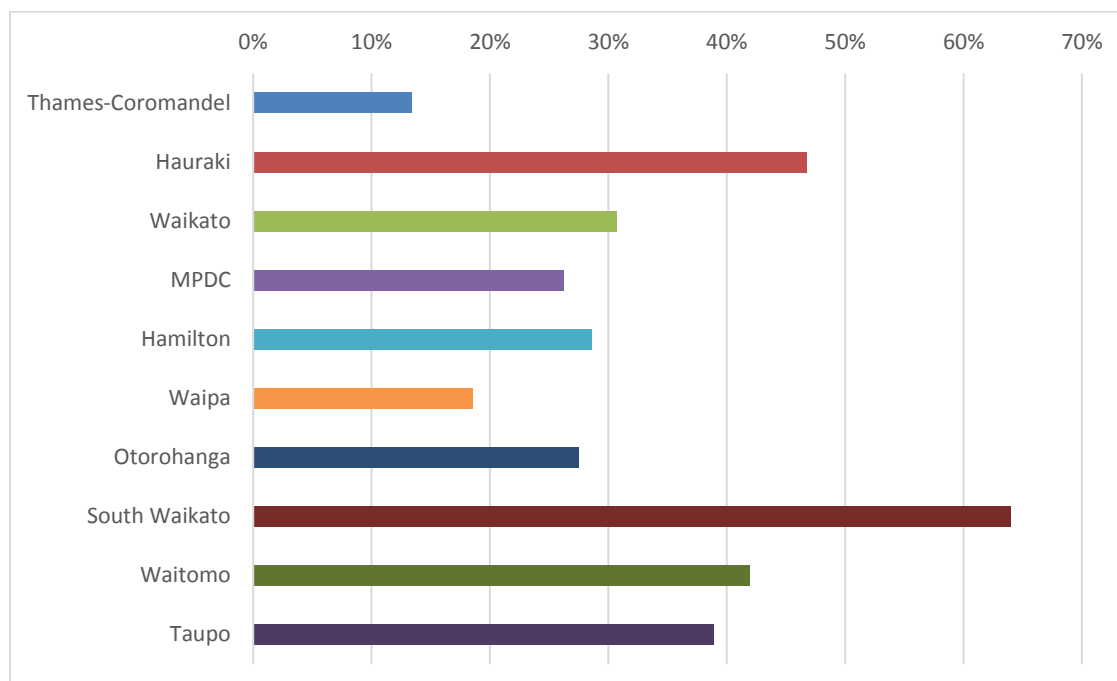
Figure 13 shows the percentage of the total district population that lives in high deprivation data zones for the Education Domain. The Education Domain measures retention, achievement and transition to education or training for school leavers; as well as the proportion of working age people 15-64 with no formal qualifications; and the proportion of youth aged 15-24 not in education, employment or training (NEET).

The Waikato Region ranks worse than the New Zealand median for education deprivation. South Waikato has the highest percentage of people living in Q5 data zones for education – 64 per cent. Hauraki follows with 47 per cent, Waitomo at 42 per cent and Taupo at 39 per cent.

Distance and mobility are a feature of education deprivation. However, education deprivation is a characteristic of both rural and urban areas so the issues are not always geographical. All towns have some Q5 data zones.

All of the towns of Turangi, Otorohanga, Paeroa, and Waihi, Putaruru, and Mangakino are Q5 education deprivation zones. Most of Ngaruawahia, Huntly, and Tokoroa is Q5. Some of Hamilton, Taupo, Te Kuiti, Te Awamutu, Kihikihi, Cambridge, Thames, Te Aroha, Matamata, Morrinsville, and Tuakau is Q5. Many of the Q5 data zones are located in rural areas in Coromandel, around Putaruru and Meremere, and in a large rural data zone stretching from Te Ahurei around the Kāwhia Harbour to Owhiro.

Figure 13: Percentage of total district population that lives in areas that are Q5 for education - 2013



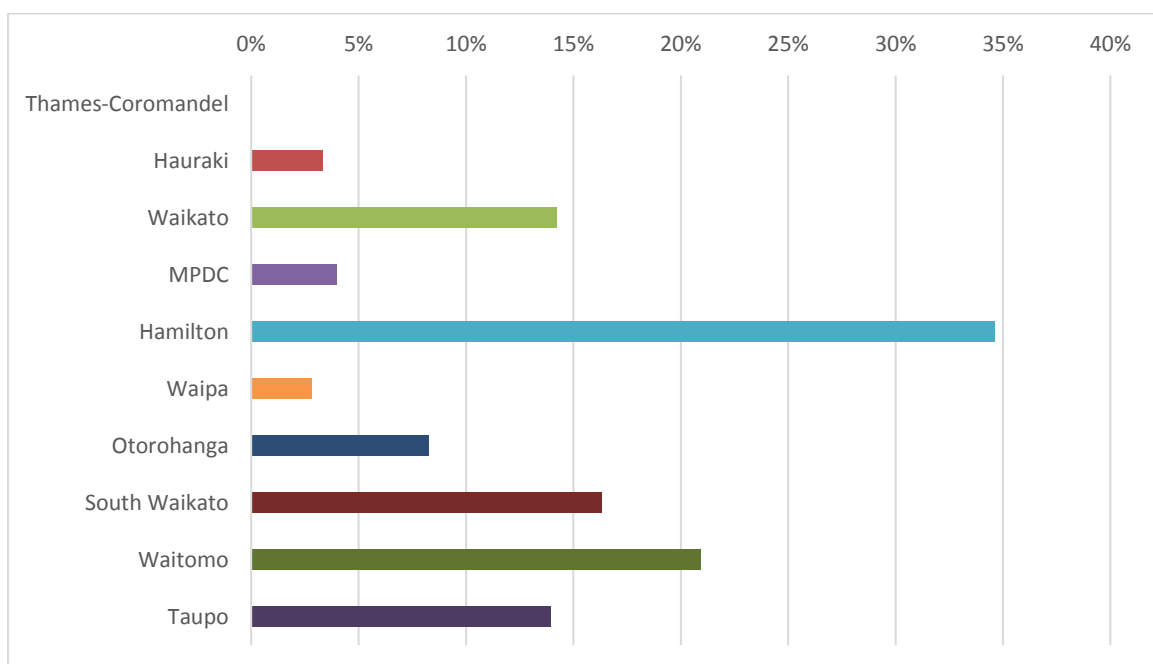
Housing

Figure 14 shows the percentage of the total district population that lives in high deprivation data zones for the Housing Domain. The Housing Domain measures the proportion of people living in overcrowded households (60% of the weighting) and rented dwellings (40%) in 2013.

Q5 housing deprivation was less concentrated than overall IMD deprivation. Most areas of housing deprivation are located in urban areas. There are very few rural data zones with Q5 housing deprivation, only Meremere and Wairakei.

Hamilton stands out as the area with the highest percentage of the population living in Q5 deprivation for housing.

Figure 14: Percentage of total district population that lives in areas that are Q5 for housing - 2013

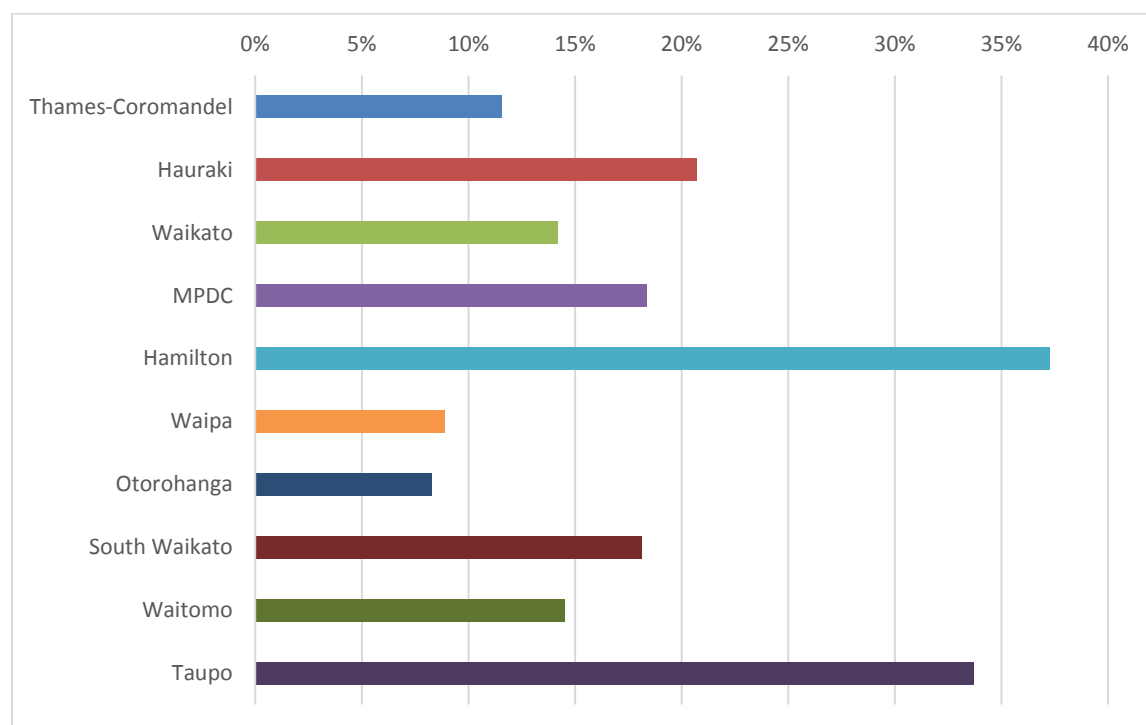


Crime

Figure 15 shows the percentage of the total district population that lives in high deprivation data zones for the Crime Domain. The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%).

Spatially high (Q5) rates of crime victimization occurred in large urban areas like Hamilton and in most towns. There was one small rural data zone with a Q5 rate of crime victimization south of Te Awamutu and a cluster of data zones south-west of Taupo. Hamilton and Taupo have the highest percentage of their population living in areas of Q5 crime victimization - 37 per cent and 34 per cent respectively. Hamilton also has the 2nd most deprived data zone for crime in New Zealand located in the central city.

Figure 15: Percentage of total district population that lives in areas that are Q5 for crime - 2013



6. Waikato Profiles (IMD)

Section 6 presents:

- the number of deprivation zones in each quintile for each district in the Waikato Region
- the percentage of population that lives in Q5 areas for overall IMD
- the distribution of deprivation zones across each district
- the type of deprivation that each district experiences and depth of deprivation in terms of ranking against all data zones in New Zealand
- population living in the areas of highest deprivation for each domain.

Waikato Region

The Waikato Region has higher than average overall IMD deprivation, with 48.1 per cent (277/576) of its data zones either in Q4 or Q5. There are 139 data zones that are ranked as most deprived. The median IMD rank in the Waikato Region district was 3488, 8.5 per cent (508 ranks) worse than the NZ median of 2979.¹⁹

Figure 16 shows the proportion of IMD data zones (not the proportion of the population) in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 16 shows that the proportion of data zones with Q5 overall housing deprivation was less than 20 per cent, while the proportion with Q5 IMD, employment, income, crime, health, education, access deprivation was greater than 20 per cent.

¹⁹ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Waikato Region Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 16: Waikato Region – proportion of data zones in each deprivation quintile

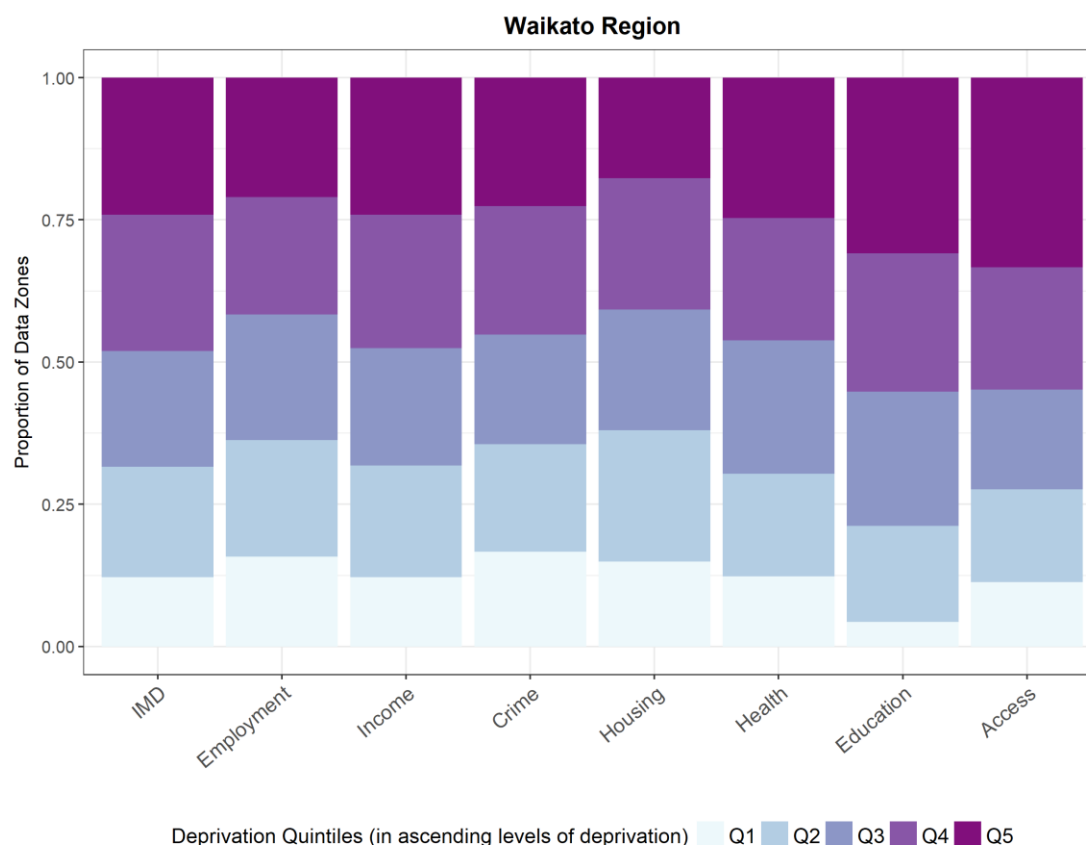


Table 4 shows how the domains rank against the New Zealand median. When overall, the Waikato Region is compared to the rest of New Zealand we find that only housing ranks better than the NZ median and only just makes it into the better category. All other domains are worse than the NZ median with education the most prevalent type of deprivation in the Waikato.

Table 4: Median district deprivation ranking per domain – Waikato Region

Domains	Median district deprivation rank per domain
Housing	2968, 0.2% (12 ranks) better than the NZ median
Crime	3190, 3.5% (211 ranks) worse than the NZ median
Employment	3208, 3.9% (231 ranks) worse than the NZ median
Health	3376, 6.6% (396 ranks) worse than the NZ median
Income	3429, 7.5% (449 ranks) worse than the NZ median
Access	3792, 13.6% (812 ranks) worse than the NZ median
Education	3826, 14.2% (846 ranks) worse than the NZ median
NZ Median = 2979	

Waikato Region Summary

The Waikato Region has higher than average overall IMD deprivation, with 48.1 per cent of its data zones either in Q4 or Q5. The strongest drivers of deprivation in the Waikato Region are education, access, and income.

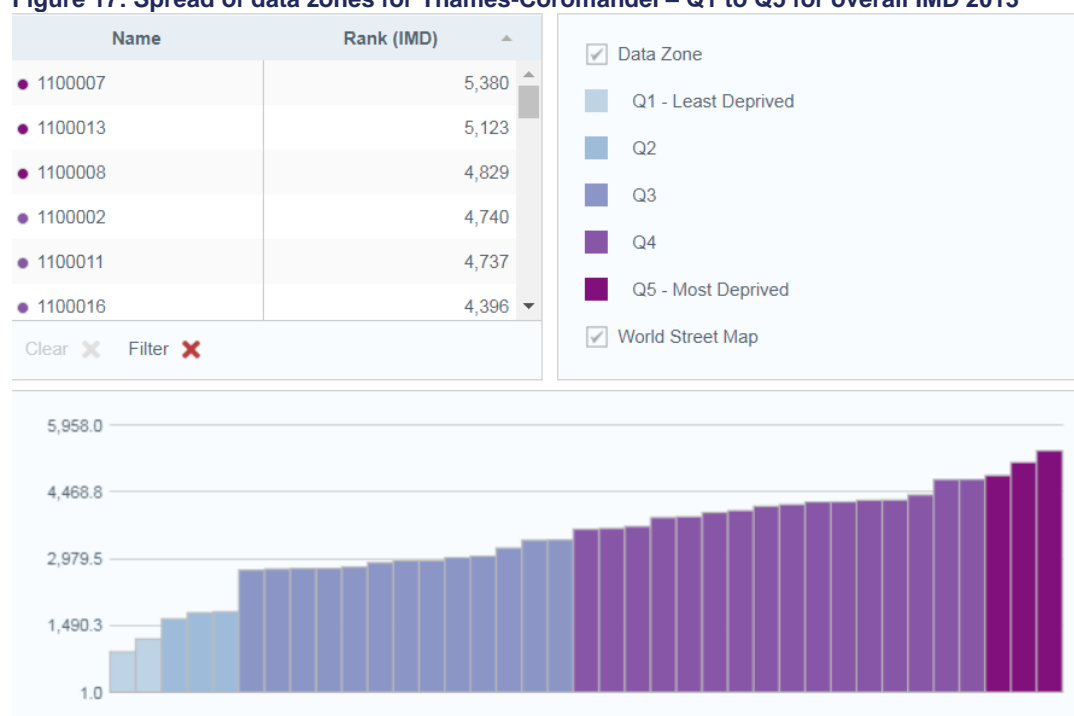
Thames-Coromandel District

Overall IMD

Figure 17 shows the proportion of data zones in Thames-Coromandel District that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Thames-Coromandel's 37 data zones would be in each quintile. A total of 8.1 per cent (3/37) of data zones were among the most deprived 20 per cent in NZ (Q5), while 5.4 per cent (2/37) were in the least deprived 20 per cent (Q1).

Thames-Coromandel has higher than average overall IMD deprivation, with 51.4 per cent (19/37) of its data zones either in Q4 or Q5²⁰.

Figure 17: Spread of data zones for Thames-Coromandel – Q1 to Q5 for overall IMD 2013

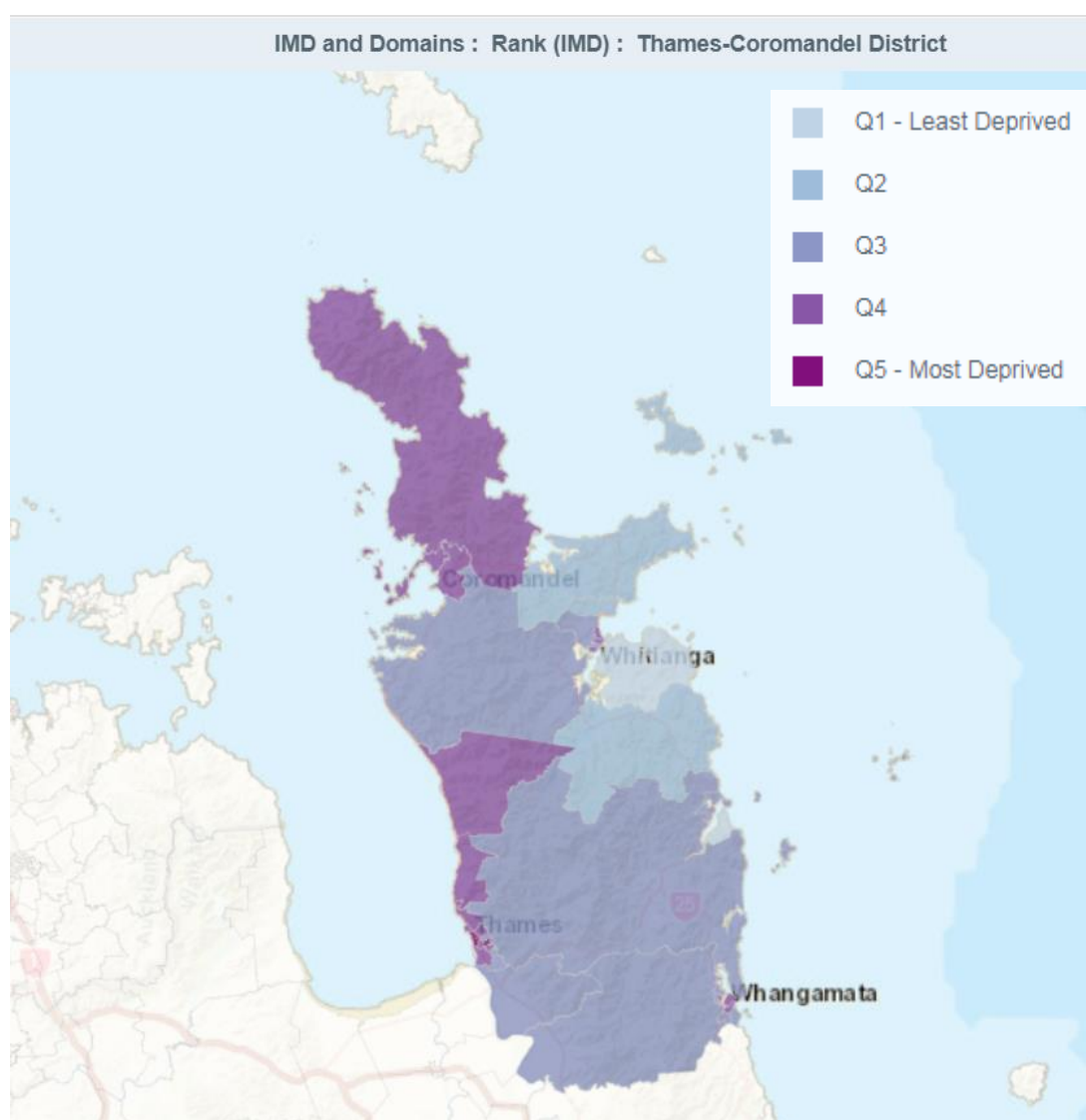


Spatial distribution of overall IMD

A total of 7 per cent of the population lives in the most deprived zones – Q5. The three most deprived areas in TCDC (Q5) are located in Thames. These areas have particularly high median deprivation rankings for health (5674/5958), education (5246/5958), crime (5158/5958) and income (5138/5958) contributing to high overall deprivation. The northern most data zone in Figure 16 is a Q4 zone particularly high on education and access deprivation.

²⁰ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Thames-Coromandel District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 18: Distribution of overall IMD for Thames-Coromandel

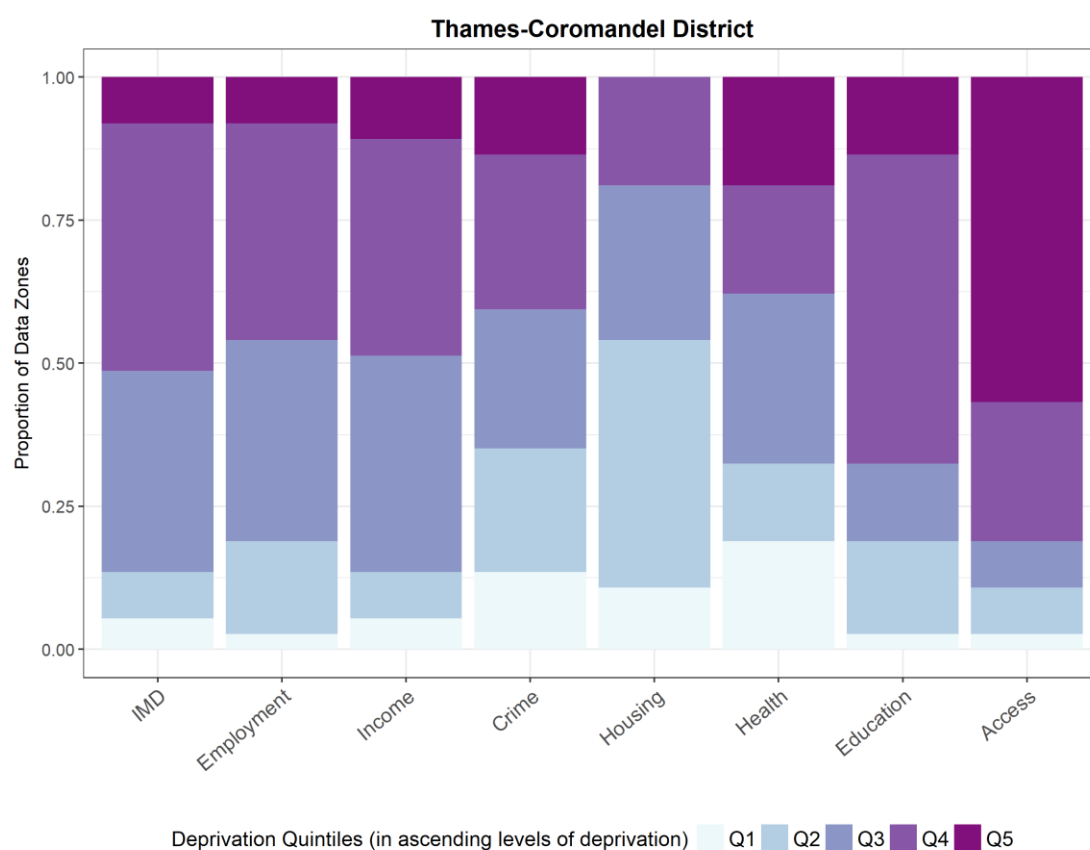


IMD domains of deprivation

Figure 19 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 19 shows that the proportion of data zones with Q5 overall IMD, employment, income, crime, housing, health, education deprivation was less than 20 per cent, while the proportion with Q5 access deprivation was greater than 20 per cent.

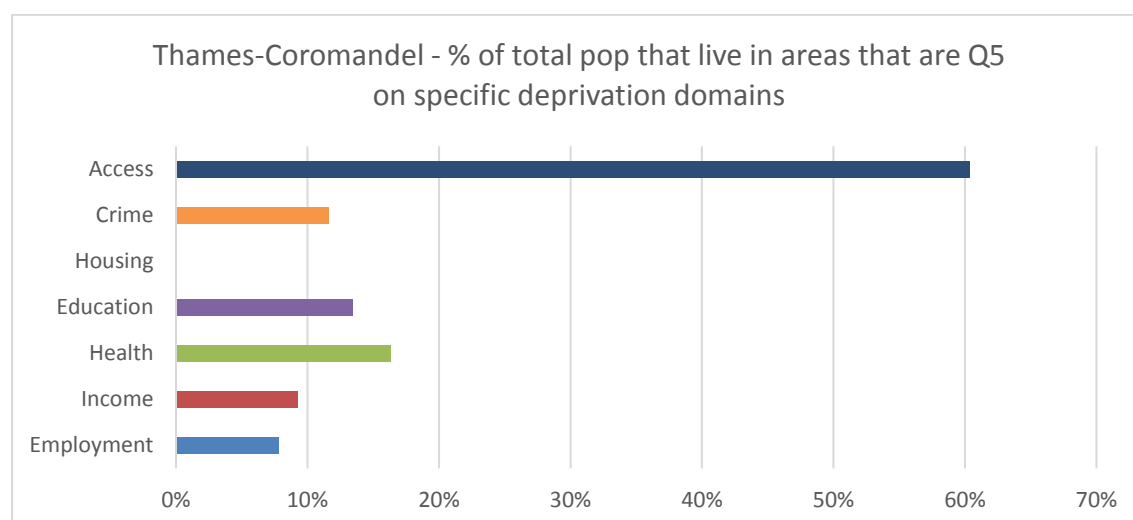
Figure 19: Deprivation Quintiles for Thames-Coromandel – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the Q5 for specific domains we find that access and health are the strongest deprivation factors in the Q5 areas, followed by education and crime.

Figure 20: Population living in the areas of highest deprivation on specific domains – Thames-Coromandel



Individual Deprivation Domains - Comparison with New Zealand Median

Table 4 shows how the domains rank against the New Zealand median. When Thames-Coromandel is compared to the rest of New Zealand we find that access, education, income and employment are below the NZ median across all data zones. Crime, health and housing are better than the NZ median.

Table 5: Median district deprivation ranking per domain – Thames-Coromandel

Domains	Median district deprivation rank per domain
Housing	2335, 10.8% (645 ranks) better than the NZ median
Health	2690, 4.9% (290 ranks) better than the NZ median
Crime	2805, 2.9% (174 ranks) better than the NZ median
Employment	3393, 7% (416 ranks) worse than the NZ median
Income	3563, 9.8% (583 ranks) worse than the NZ median
Education	3901, 15.5% (921 ranks) worse than the NZ median
Access	5297, 38.9% (2317 ranks) worse than the NZ median
NZ Median = 2979	

Thames-Coromandel Summary

Thames-Coromandel has only a small proportion of the population living in the highest deprivation but has over 50 per cent living in Q4 and 5. The highest deprivation areas are located in Thames.

When the whole of Thames-Coromandel is compared against the rest of New Zealand it is worse on access, education, income and employment and better on crime, health and housing. However, the biggest drivers of deprivation within the Q5 zones are access, health, education and crime.

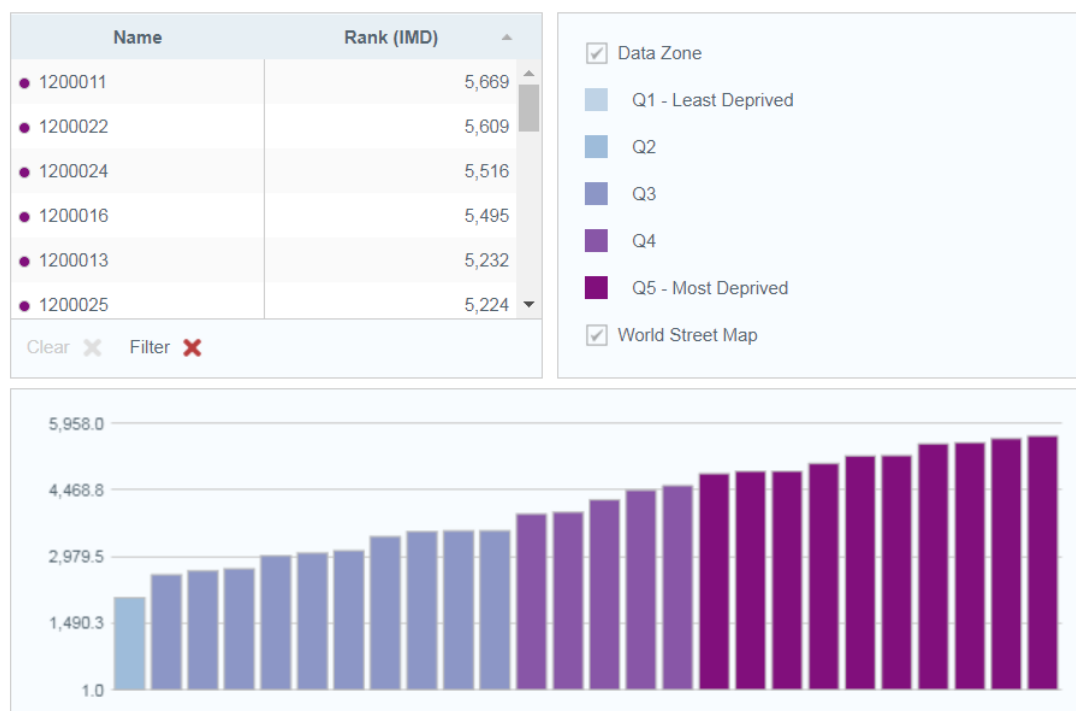
Hauraki District

Overall IMD

Figure 21 shows the proportion of data zones in Hauraki that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Hauraki's 26 data zones would be in each quintile. A total 38.5 per cent (10/26) of data zones were among the most deprived 20 per cent in NZ (Q5), while 0 per cent (0/26) were in the least deprived 20 per cent (Q1).

The Hauraki district has higher than average overall IMD deprivation, with 57.7 per cent (15/26) of its data zones either in Q4 or Q5²¹.

Figure 21: Spread of data zones for Hauraki – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

A total of 38 per cent of the population lives in the most deprived zones – Q5. Waihi and Paeroa are predominantly made up of Q5 zones. These areas have particularly high median deprivation rankings for education (5523/5958), income (5230/5958), employment (5187/5958) and health (5122.5/5958) contributing to high overall deprivation.

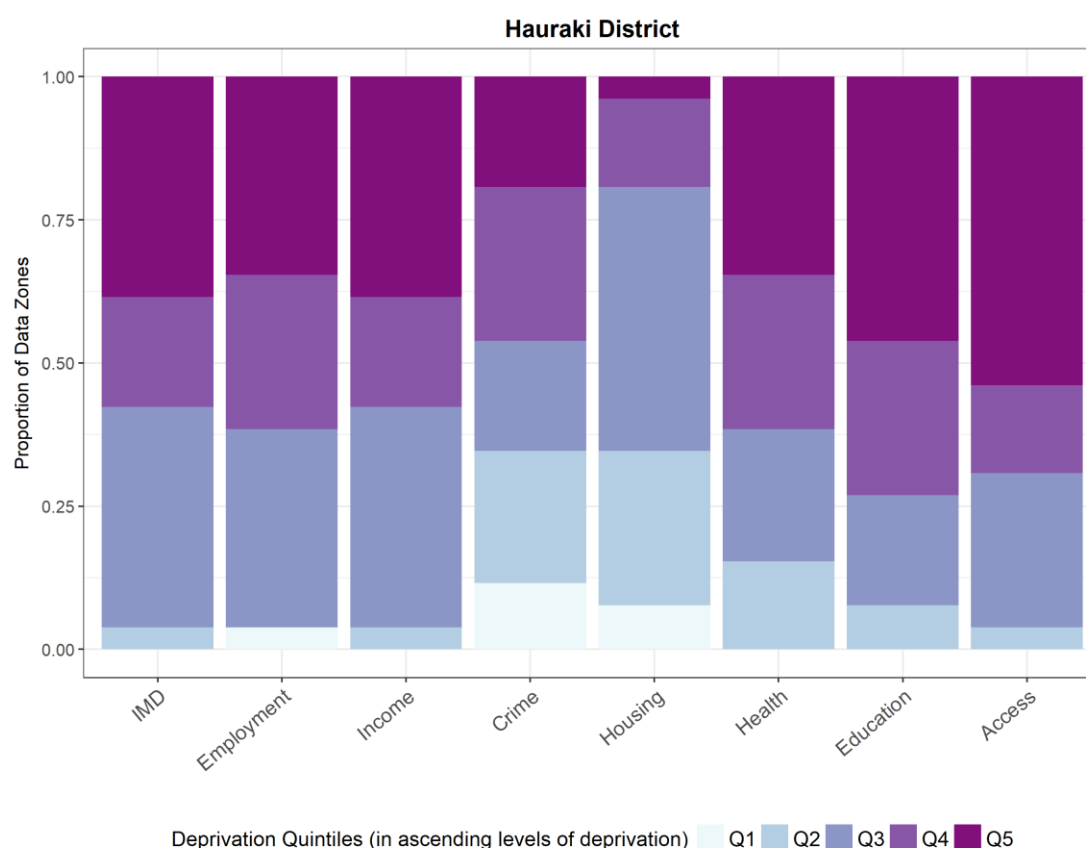
Figure 22 shows the distribution of the overall IMD data zones across the Hauraki district.

²¹ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Hauraki District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

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Figure 23 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

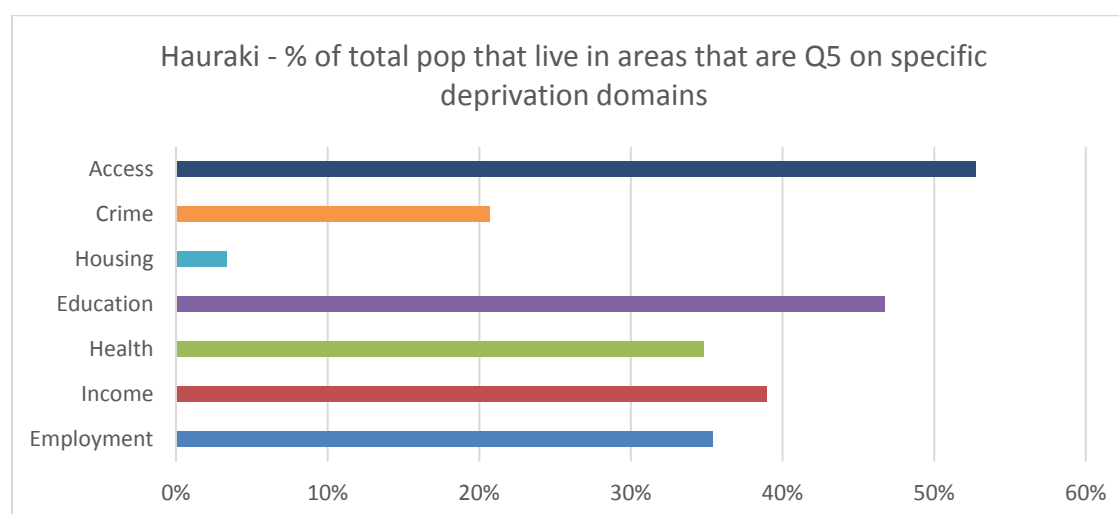
Figure 23: Deprivation quintiles for Hauraki – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains we find that access and education are the strongest deprivation issues in the Q5 zones followed by income. Housing deprivation is not a strong factor.

Figure 24: Population living in the areas of highest deprivation on specific domains - Hauraki



Individual Deprivation Domains - Comparison with New Zealand Median

The median IMD rank in the Hauraki district was 4104, 18.9 per cent (1124 ranks) worse than the NZ median of 2979. Table 6 shows how the domains rank against the New Zealand median for that domain. Access, education, health, income, employment and crime are below the NZ median across all data zones. Only housing is better than the NZ median.

Table 6: Median district deprivation ranking per domain - Hauraki

Domains	Median district deprivation rank per domain
Housing	2645, 5.6% (335 ranks) better than the NZ median
Crime	3323, 5.8% (344 ranks) worse than the NZ median
Employment	3992, 17% (1015 ranks) worse than the NZ median
Income	4156, 19.7% (1176 ranks) worse than the NZ median
Health	4350, 23% (1370 ranks) worse than the NZ median
Education	4640, 27.9% (1660 ranks) worse than the NZ median
Access	4892, 32.1% (1912 ranks) worse than the NZ median
NZ Median = 2979	

Hauraki Summary

Hauraki has a large proportion of the population (38%) living in the most deprived zones. When Hauraki is compared against the rest of New Zealand it is worse than the median on all domains except housing.

When just the Q5 is considered, the biggest drivers of deprivation in the Q5 zones within Hauraki are access, education, income, employment and health.

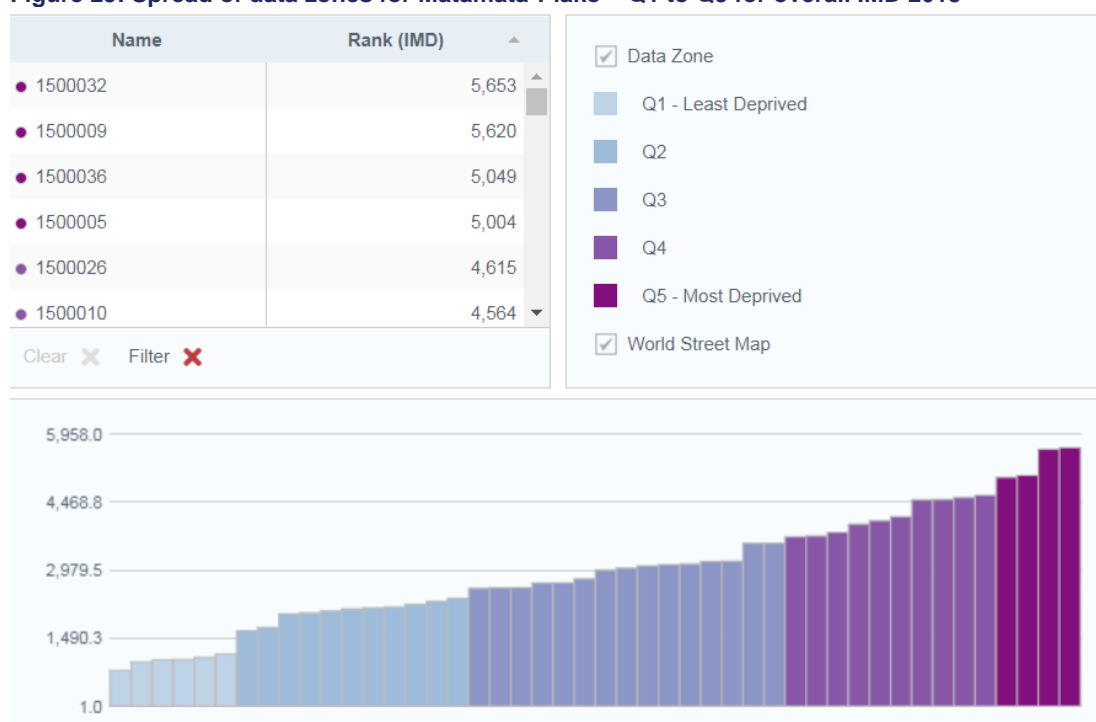
Matamata-Piako District

Overall IMD

Figure 25 shows the proportion of data zones in Matamata-Piako district that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Matamata-Piako's 46 data zones would be in each quintile. A total of 8.7 per cent (4/46) of data zones were among the most deprived 20 per cent in NZ (Q5), while 13 per cent (6/46) were in the least deprived 20 per cent (Q1).

The Matamata-Piako district has lower than average overall IMD deprivation, with 30.4 per cent (14/46) of its data zones either in Q4 or Q5²².

Figure 25: Spread of data zones for Matamata-Piako – Q1 to Q5 for overall IMD 2013

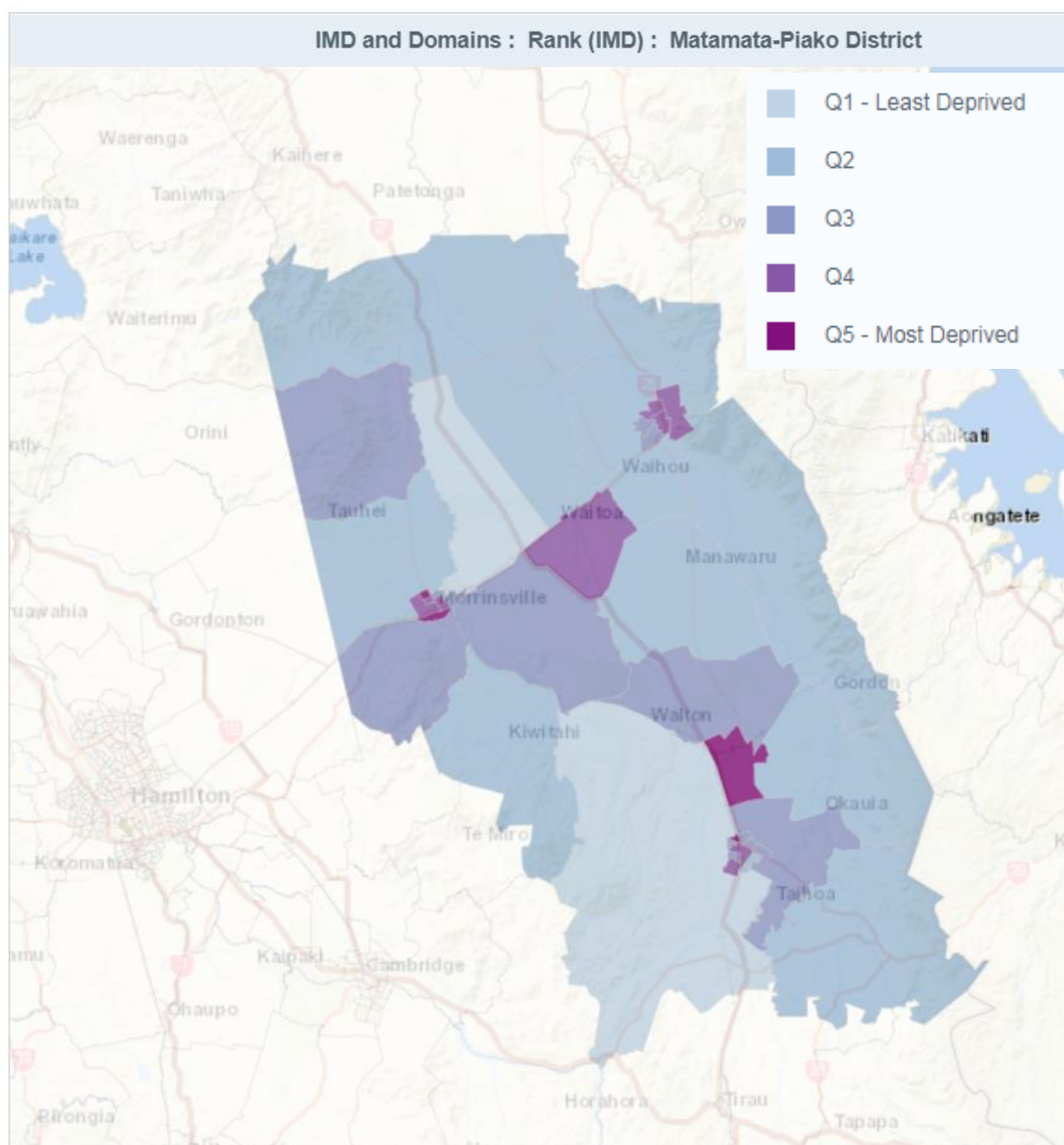


Spatial distribution of overall IMD

A total of 8 per cent of the population lives in the most deprived zones – Q5. Figure 26 shows the distribution of the data zones. The overall IMD Q5 zones are located in Morrinsville, Waharoa, and Matamata. These data zones are characterised by high deprivation - (Q5) median deprivation ranks for education (5842.5/5958), income (5363/5958), crime (4986/5958) and housing (4861/5958). One data zone has less crime than the others. Waharoa is the 2nd most deprived data zone in the country for education.

²² The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Matamata-Piako District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 26: Distribution of data zones for Matamata-Piako – Q1 to Q5 for overall IMD 2013

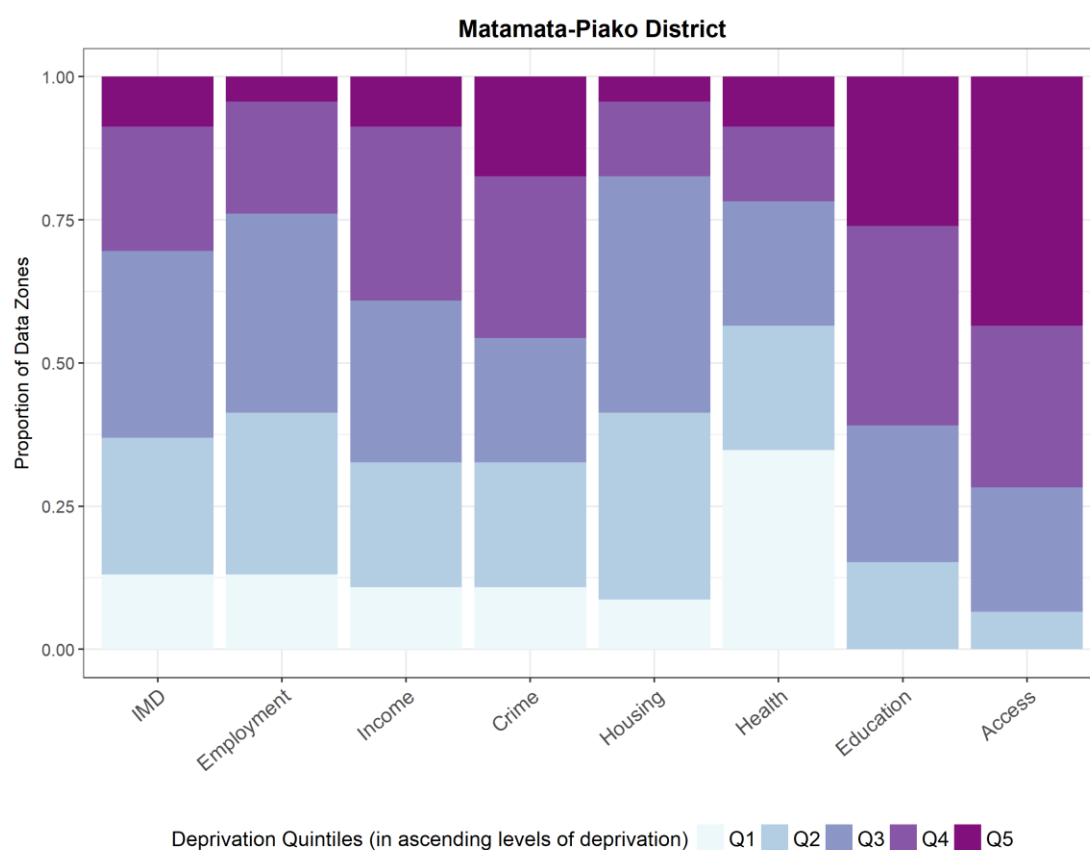


IMD domains of deprivation

Figure 27 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 27 shows that the proportion of data zones with Q5 overall IMD, employment, income, crime, housing, and health deprivation was less than 20 per cent, while the proportion with Q5 education, access deprivation was greater than 20 per cent.

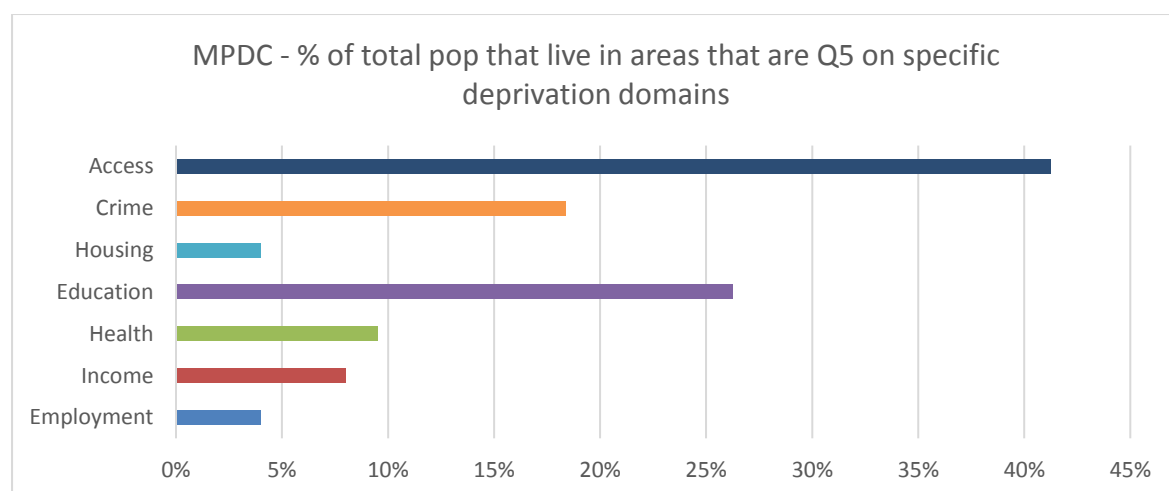
Figure 27: Deprivation quintiles for Matamata-Piako – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains we find that access, education and crime are the strongest deprivation factors in the Q5 zones. Housing and employment deprivation are not strong factors for most of the population in these Q5 zones.

Figure 28: Population living in the areas of highest deprivation on specific domains – Matamata-Piako



Individual Deprivation Domains - Comparison with New Zealand Median

Table 7 shows how the domains rank against the New Zealand median. When Matamata-Piako is compared to the rest of New Zealand we find that access, education, crime and income are below the NZ median across all data zones. Housing, employment and health are better than the NZ median.

Table 7: Median district deprivation ranking per domain – Matamata-Piako

Domains	Median district deprivation rank per domain
Health	2050, 15.6% (930 ranks) better than the NZ median
Employment	2522, 7.6% (455 ranks) better than the NZ median
Housing	2694, 4.8% (286 ranks) better than the NZ median
Income	3040, 1% (60 ranks) worse than the NZ median
Crime	3374, 6.6% (395 ranks) worse than the NZ median
Education	4130, 19.3% (1150 ranks) worse than the NZ median
Access	4460, 24.8% (1480 ranks) worse than the NZ median
NZ Median = 2979	

Matamata-Piako Summary

Matamata-Piako has only a small proportion of the population living in the highest deprivation zones. The drivers of deprivation across Matamata-Piako are predominantly access, education, and crime.

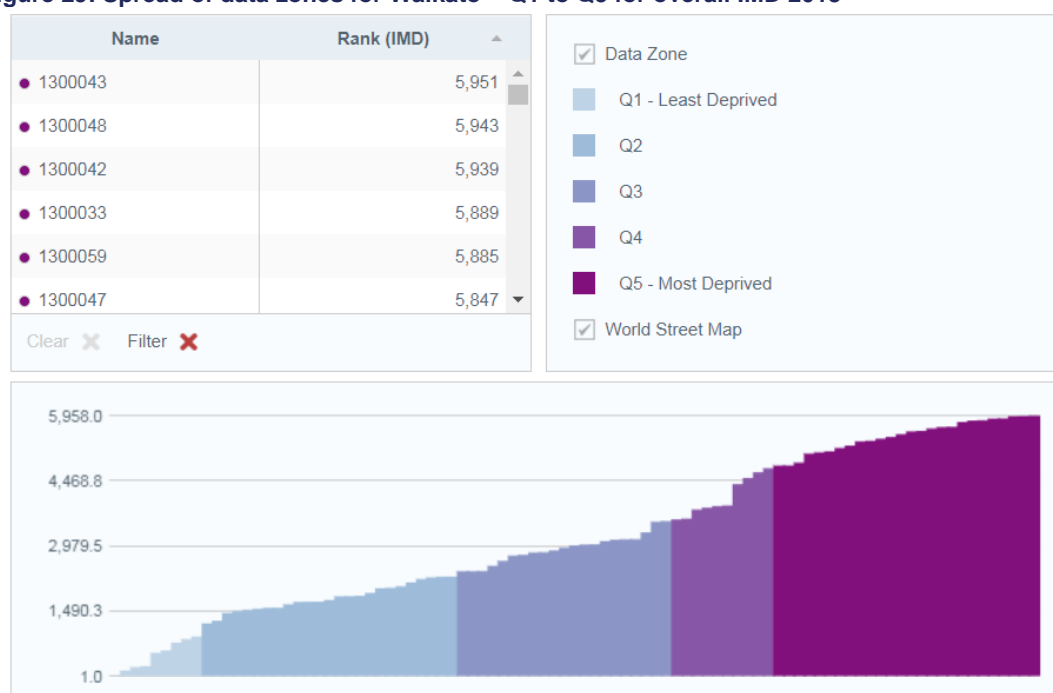
Waikato District

Overall IMD

Figure 29 shows the proportion of data zones in Waikato District that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Waikato District's 91 data zones would be in each quintile. A total of 28.6 per cent (26/91) of data zones were among the most deprived 20 per cent in NZ (Q5), while 9.9 per cent (9/91) were in the least deprived 20 per cent (Q1).

The Waikato District has lower than average overall IMD deprivation, with 39.6 per cent (36/91) of its data zones either in Q4 or Q5²³.

Figure 29: Spread of data zones for Waikato – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

A total of 28 per cent of the population lives in the most deprived zones – Q5. Figure 29 shows that Q5 zones are located around Huntly, Ngaruawahia and Meremere. The majority of Q1 and 2 zones are clustered around Hamilton. Ngaruawahia and Huntly have the highest deprivation zones. These deprivation zones are characterised for the most part by very high employment, income, health and education deprivation. High crime and housing deprivation is a strong feature of several off these zones but not all.

Huntly has one of the most deprived data zones in the country ranking 5,951 out of 5,958 for the overall IMD. This particular data Q5 zone has the following rankings for the separate domains:

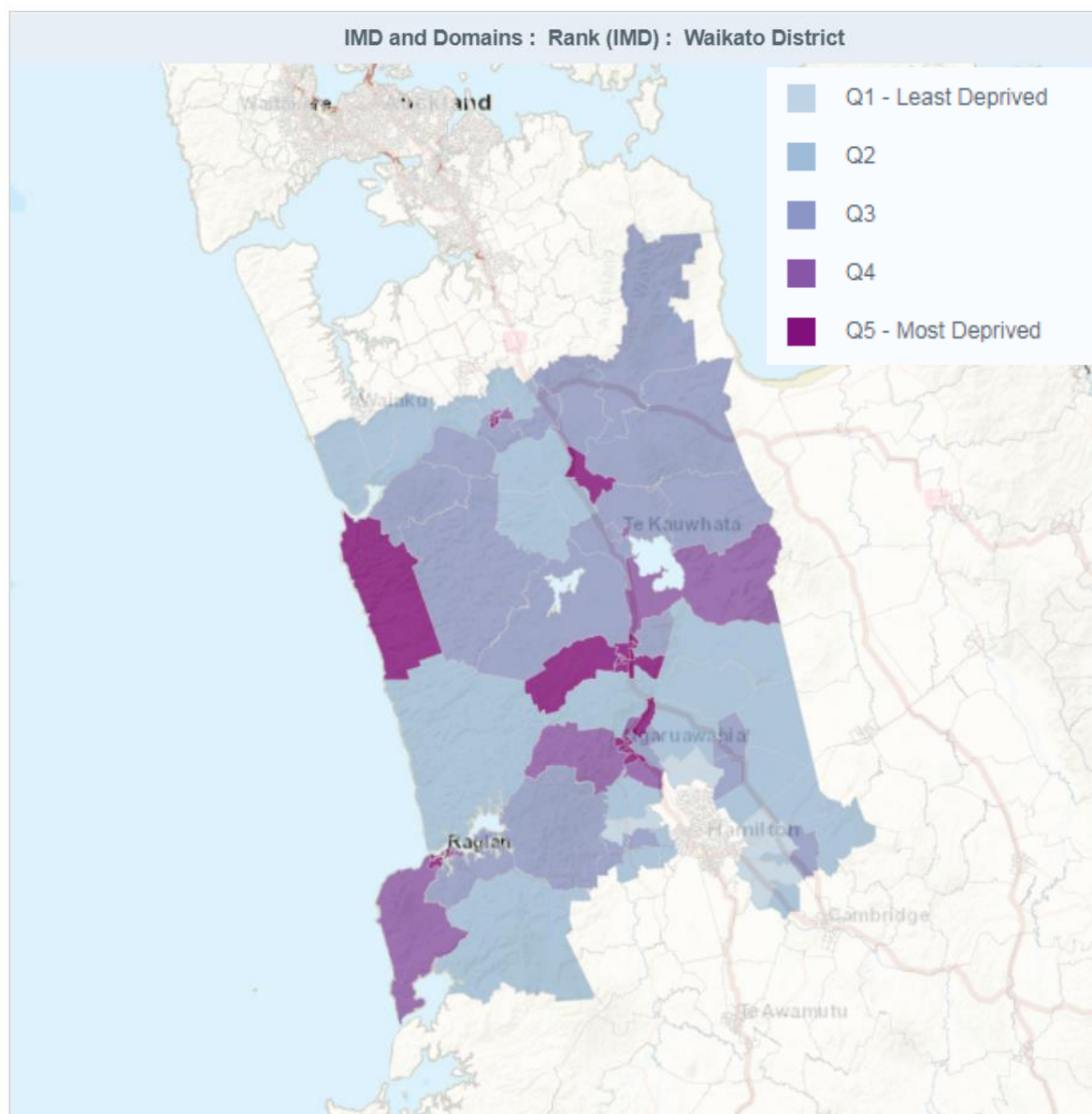
²³ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Waikato District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Table 8: Deprivation ranks by domain for most deprived data zone – Waikato District

Employment	Income	Crime	Housing	Health	Education	Access
5947	5951	5744	5622	5612	5939	2161

In descending order, the Waikato District has high (Q5) median deprivation ranks for education (5656/5958), income (5632/5958), employment (5481/5958) and health (5276.5/5958) that were contributing to high overall deprivation in the 26 data zones that are Q5.

Figure 30: Distribution of overall IMD for Waikato

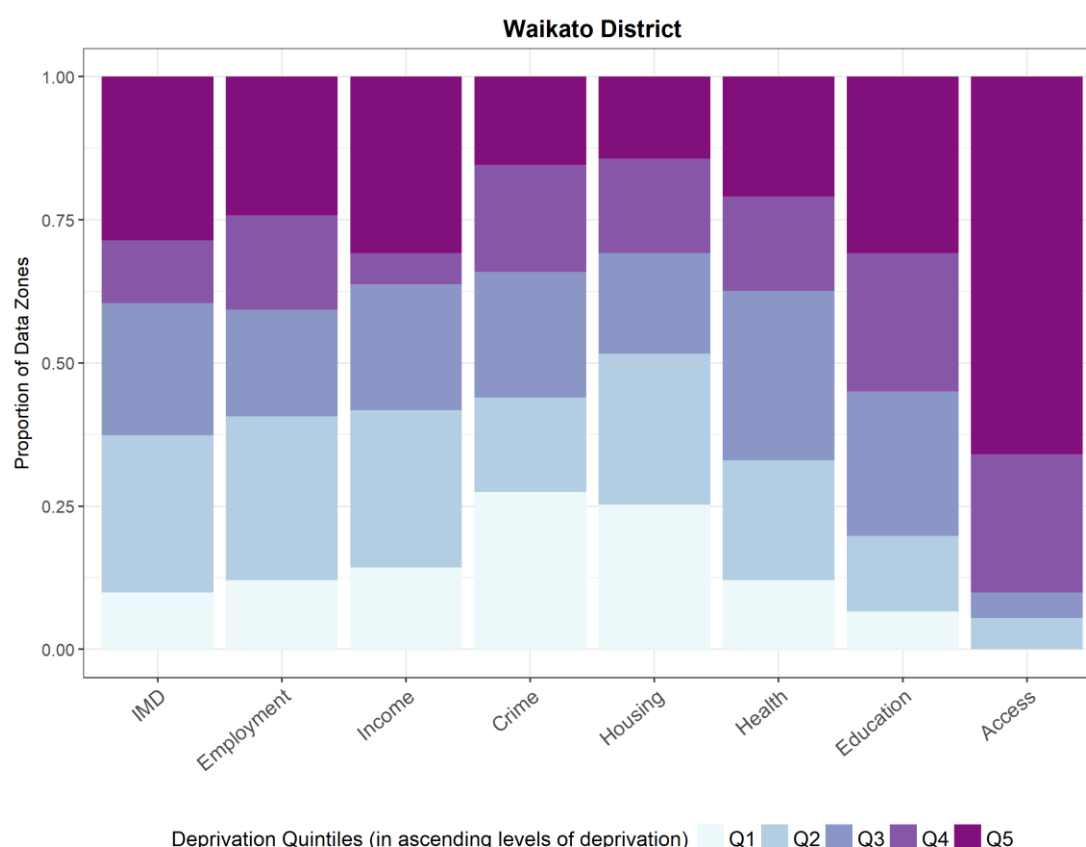


IMD domains of deprivation

Figure 31 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 31 shows that the proportion of data zones that are Q5 for crime and housing deprivation was less than 20 per cent, while the proportion with Q5 IMD, employment, income, health, education, access deprivation was greater than 20 per cent.

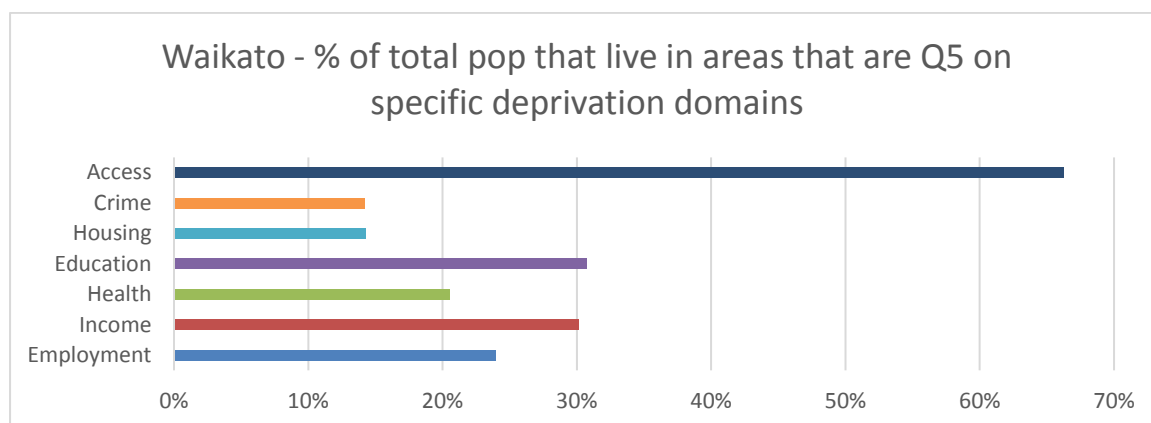
Figure 31: Deprivation quintiles for Waikato District – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains we find that access, income and education are the strongest deprivation drivers in the Q5 areas followed by employment and health.

Figure 32: Population living in the areas of highest deprivation on specific domains – Waikato



Individual Deprivation Domains - Comparison with New Zealand Median

Table 9 shows how the domains rank against the New Zealand median. When Waikato District as a whole is compared to the rest of New Zealand we find that access and education are below the NZ median across all data zones. Income, employment, crime, health and housing are better than the NZ median.

Table 9: Median district deprivation ranking per domain – Waikato

Domains	Median district deprivation rank per domain
Housing	2304, 11.3% (676 ranks) better than the NZ median
Crime	2603, 6.3% (376 ranks) better than the NZ median
Income	2875, 1.8% (105 ranks) better than the NZ median
Health	2935, 0.8% (45 ranks) better than the NZ median
Employment	2933, 0.7% (44 ranks) better than the NZ median
Education	3726, 12.5% (746 ranks) worse than the NZ median
Access	4971, 33.4% (1991 ranks) worse than the NZ median
NZ Median = 2979	

Waikato District Summary

Waikato District has only a small proportion of the population living in the highest deprivation but has over 50 per cent living in Q4 and 5. The highest deprivation areas are located in Huntly and Ngaruawahia.

When the Waikato District is compared against the rest of New Zealand it is worse on access and education and better on crime, health, housing, income and employment. When just the Q5 is considered, the biggest drivers of deprivation in the Q5 zones within Waikato are access, health, education and crime in terms of the number of people who live in high deprivation on those specific domains.

It must be noted that district level data can mask issues at individual data zone level. Huntly has one of the most deprived data zones in the country ranking 5,951 out of 5,958. We recommend using the online mapping tools to drill down into the detail of individual data zones.

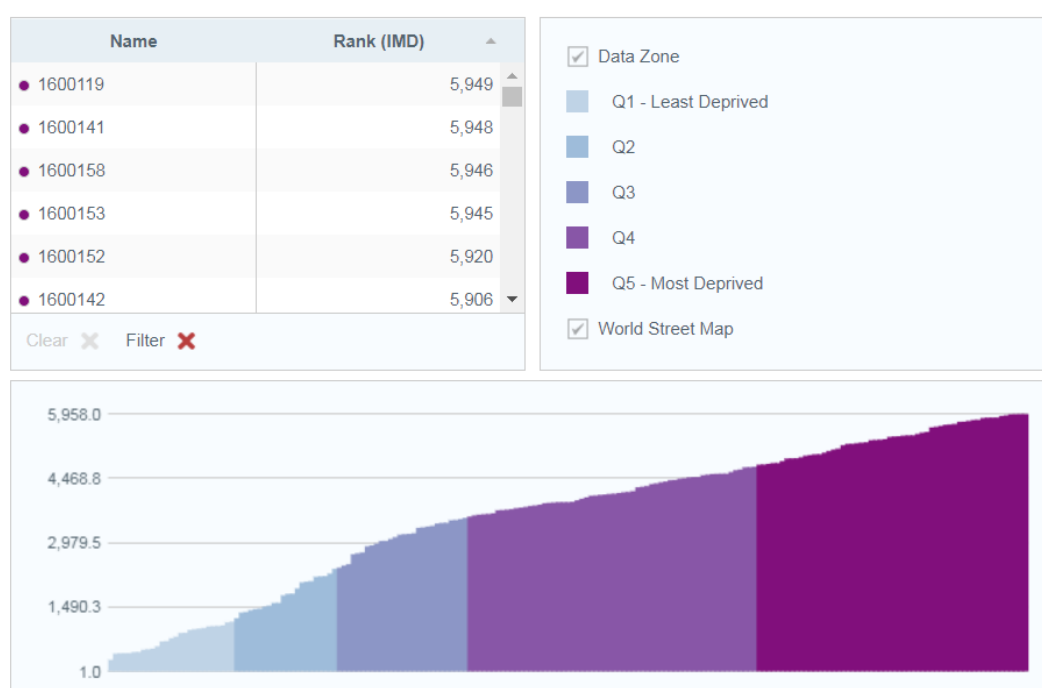
Hamilton City

Overall IMD

Figure 33 shows the proportion of data zones in Hamilton City that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of Hamilton's 197 data zones would be in each quintile. A total of 29.4 per cent (58/197) of data zones were among the most deprived 20 per cent in NZ (Q5), while 13.7 per cent (27/197) were in the least deprived 20 per cent (Q1).

The Hamilton City district has higher than average overall IMD deprivation, with 60.9 per cent (120/197) of its data zones either in Q4 or Q5²⁴.

Figure 33: Spread of data zones for Hamilton – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

A large proportion of the city lives in Q4 and Q5 zones. A total of 30 per cent of the population live in the most deprived zones – Q5. There are 58 data zones that are high (Q5) deprivation. The median deprivation rank for the overall IMD for these 58 data zones is 5426/5,958. The drivers of deprivation for these 58 data zones in 2013, contributing to high overall deprivation are as follows:

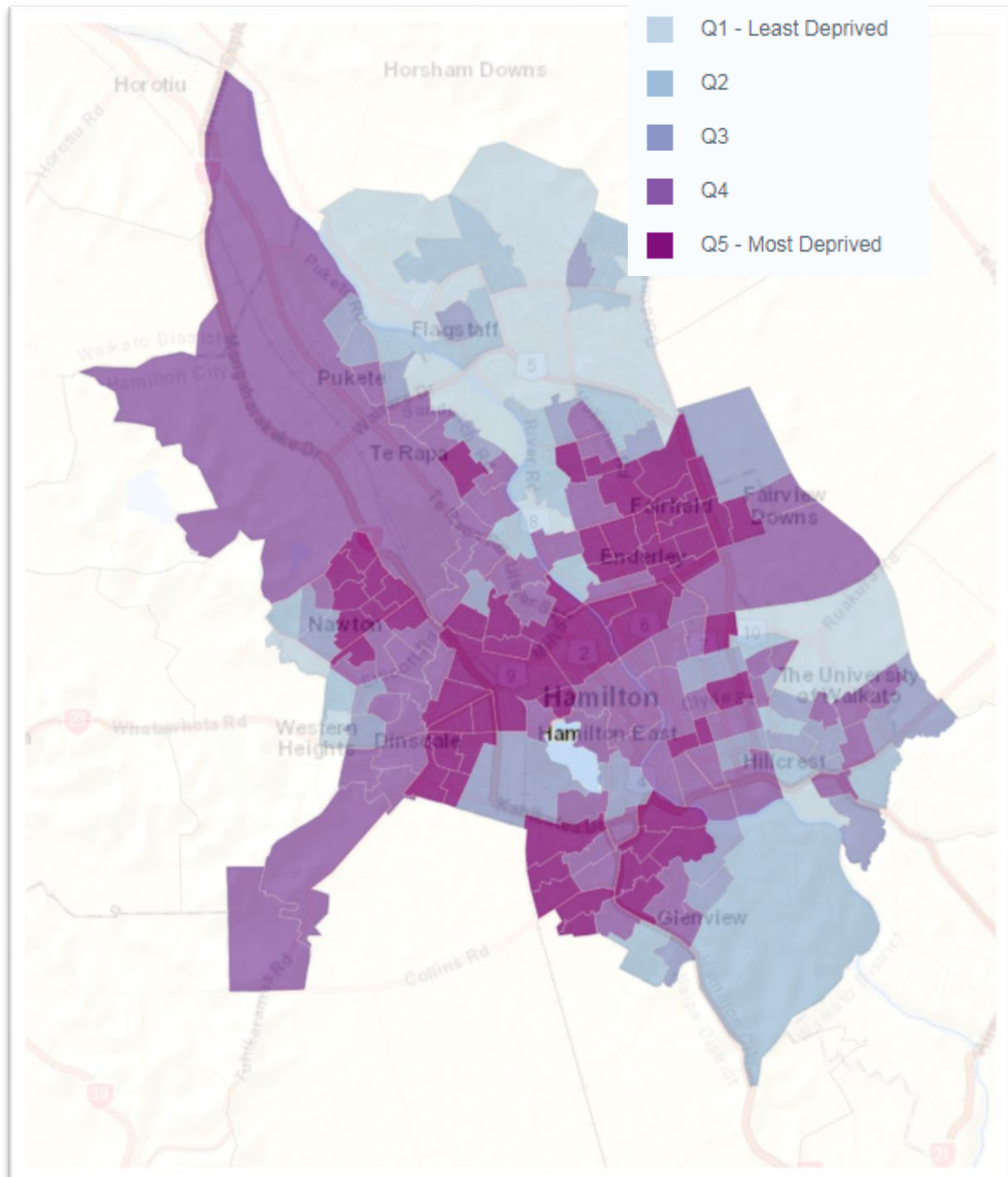
Table 10: Median deprivation ranks by domain for 58 data zones with Q5 IMD – Hamilton

Employment	Income	Crime	Housing	Health	Education	Access
5344	5530.5	5031	5147.5	5480	5357.5	1526

²⁴ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Hamilton City Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 34 shows the distribution of the Q5 within the city of Hamilton. The five most deprived Q5 zones in Hamilton are located in the suburb of Fairfield. These zones are characterised by very high deprivation on all domains except access. The suburbs of Bader, Dinsdale, Enderley, Frankton, Melville and Nawton also contain very high Q5 zones.

Figure 34: Distribution of overall IMD for Hamilton



The most deprived zone in Hamilton has an overall IMD rank of 5,949 out of 5,958. Table 11 shows the deprivation ranks by domain of the most deprived zone.

Table 11: Deprivation ranks by domain for most deprived data zone – Hamilton

Employment	Income	Crime	Housing	Health	Education	Access
5849	5939	5736	5727	5897	5944	1751

Hamilton also contains the 2nd most deprived data zone in New Zealand for the crime domain with a ranking of 5957 out of 5958 - the Hamilton CBD. Central Christchurch is the most deprived crime zone in the country. There is no correlation between the eight highest data zone crime spots in the city and other deprivation domains. Crime hotspots were generally located in areas where there are public spaces in the central city, Frankton, shopping centres, and the hospital.

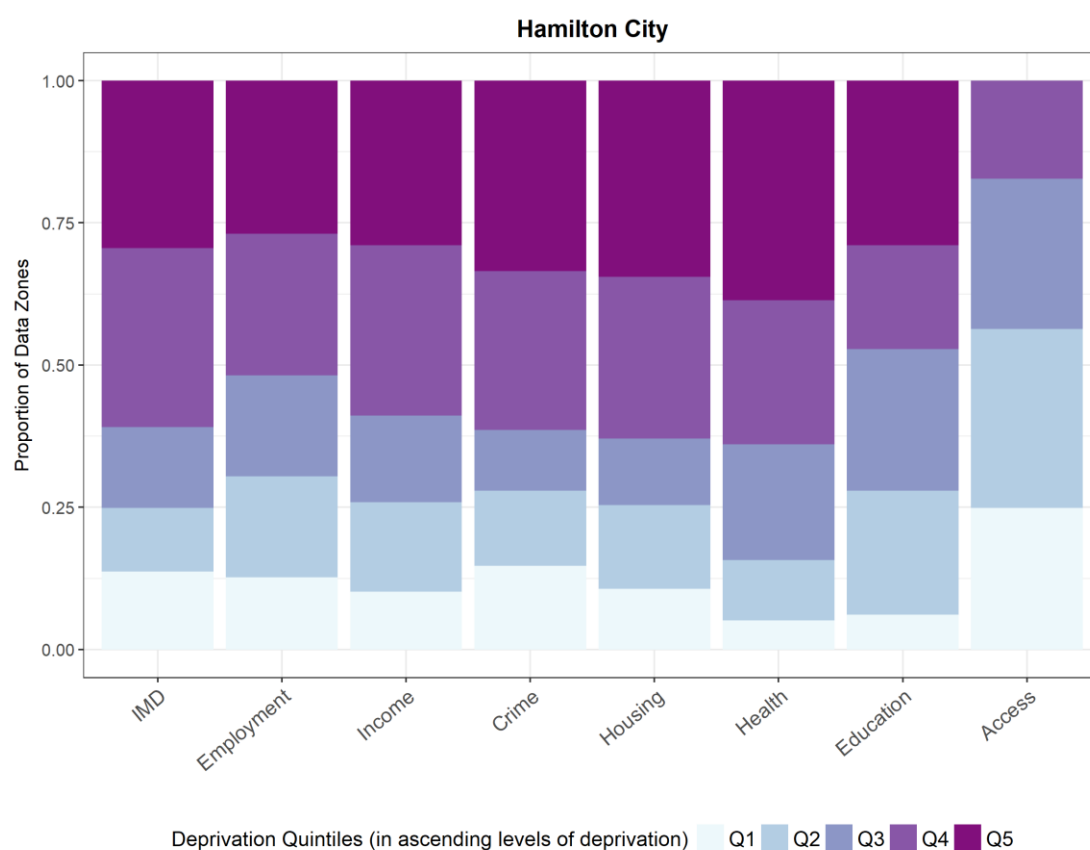
Hamilton also has the 2nd most deprived data zone in the New Zealand for the income domain – 5957/5958, located in Enderley. Hamilton also has the 3rd most deprived data zone for health. The spatial distribution of the health Q5 zone matches for the most part the overall IMD Q5 zones. Generally high health Q5 zones also experience high deprivation in other domains.

IMD domains of deprivation

Figure 35 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 35 shows that the proportion of data zones with Q5 access deprivation was less than 20 per cent, while the proportion with Q5 IMD, employment, income, crime, housing, health, and education deprivation was greater than 20 per cent.

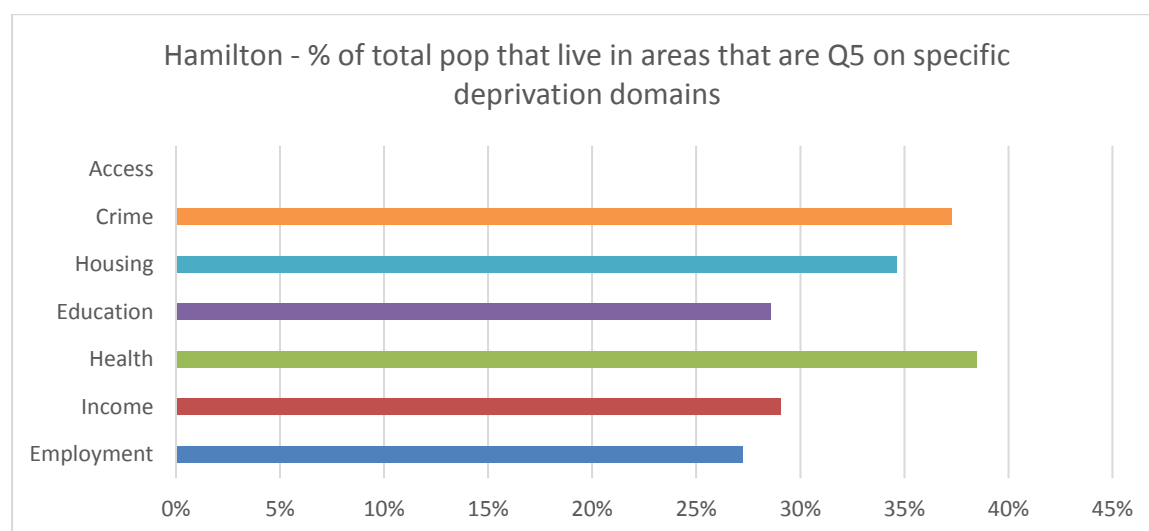
Figure 35: Deprivation quintiles for Hamilton – proportion of data zones



Population living in the highest deprivation zones

Figure 36 shows that health and crime are the strongest deprivation issues in Hamilton followed by housing. There are no Q5 access zones in Hamilton.

Figure 36: Population living in the areas of highest deprivation on specific domains - Hamilton



Individual Deprivation Domains - Comparison with New Zealand Median

Table 12 shows how the domains rank against the New Zealand median. When Hamilton City is compared to the rest of New Zealand we find that health, housing, crime, income, employment and education are below the NZ median for the combined data zones. Access is the only domain better than the NZ median. The median overall IMD rank in the Hamilton City was 3911, 15.6 per cent (931 ranks) worse than the NZ median of 2979.

Table 12: Median district deprivation ranking per domain - Hamilton

Domains	Median district deprivation rank per domain
Access	2106, 14.7% (874 ranks) better than the NZ median
Education	3387 or 6.8% (407 ranks) worse than the NZ median
Employment	3674, 11.7% (697 ranks) worse than the NZ median
Income	3933, 16% (953 ranks) worse than the NZ median
Crime	4084, 18.5% (1105 ranks) worse than the NZ median
Housing	4170, 20% (1190 ranks) worse than the NZ median
Health	4269, or 21.6% (1289 ranks) worse than the NZ median
NZ Median = 2979	

Hamilton Summary

Hamilton has 30 per cent of the population living in the highest deprivation. The Hamilton City has higher than average overall IMD deprivation, with 60.9 per cent of its data zones either in Q4 or Q5. When Hamilton is compared against the rest of New Zealand it is worse on all domains except access. The biggest drivers of deprivation in the Q5 zones are health, crime and housing.

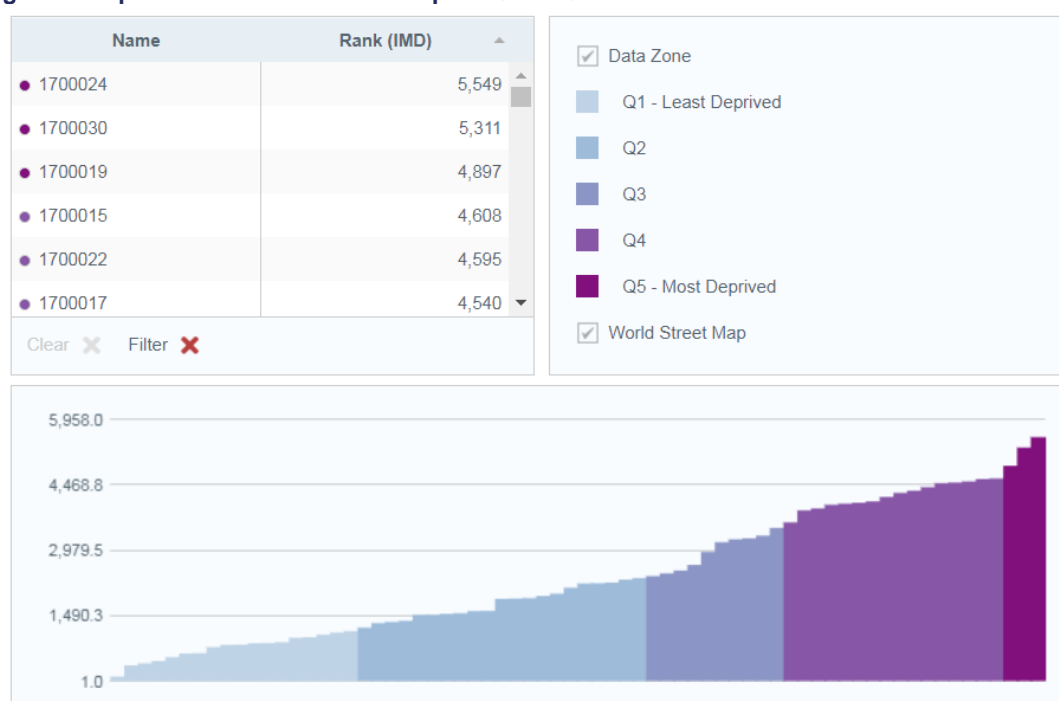
Waipa District

Overall IMD

Figure 37 shows the proportion of data zones in Waipa in each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Waipa's 68 data zones would be in each quintile. A total of 4.4 per cent (3/68) of data zones were among the most deprived 20 per cent in NZ (Q5), while 13.6 per cent (18/68) were in the least deprived 20 per cent (Q1).

Waipa has lower than average overall IMD deprivation, with 27.9 per cent (19/68) of its data zones either in Q4 or Q5²⁵.

Figure 37: Spread of data zones for Waipa – Q1 to Q5 for overall IMD 2013

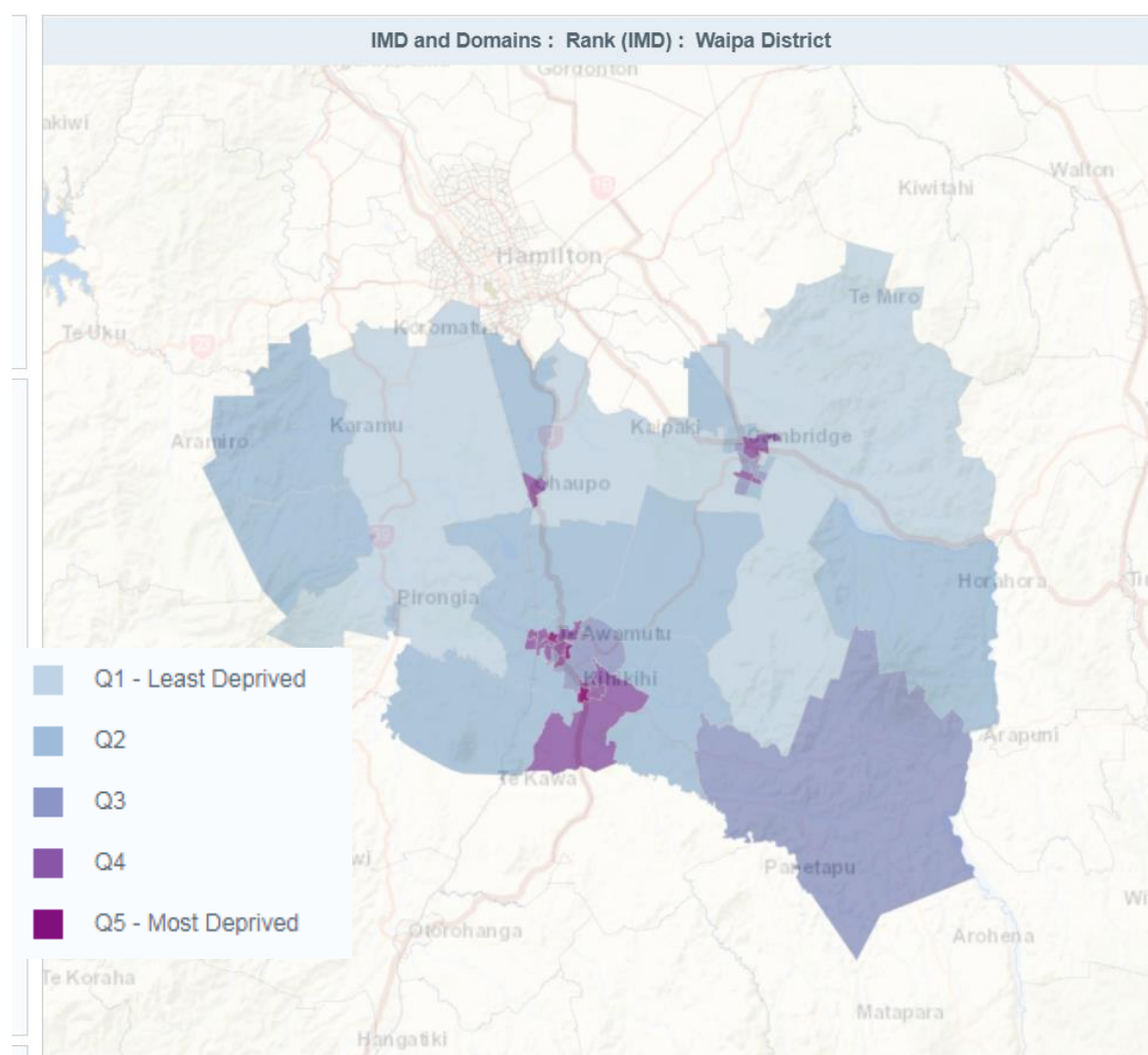


Spatial distribution of overall IMD

A total of 4 per cent of the population lives in the most deprived zones – Q5. The Q5 zones are located in Te Awamutu and Kihikihi. Te Awamutu is more affected by deprivation than Cambridge. These areas have particularly high median deprivation rankings for education (5709/5958), income (5397/5958), and health (5185/5958), contributing to high overall deprivation.

²⁵ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Waipa District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 38: Distribution of overall IMD for Waipa

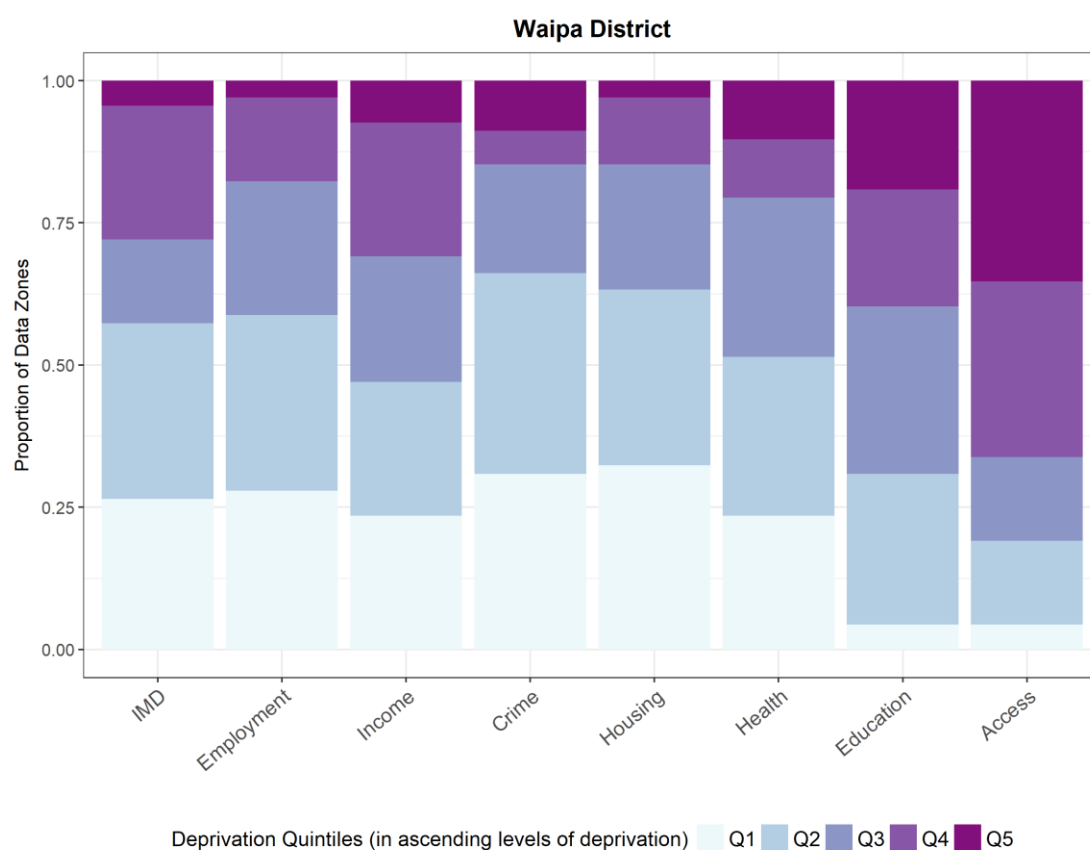


IMD domains of deprivation

Figure 39 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 39 shows that the proportion of data zones with Q5 overall IMD, employment, income, crime, housing, health, education deprivation was less than 20 per cent, while the proportion with Q5 access deprivation was greater than 20 per cent.

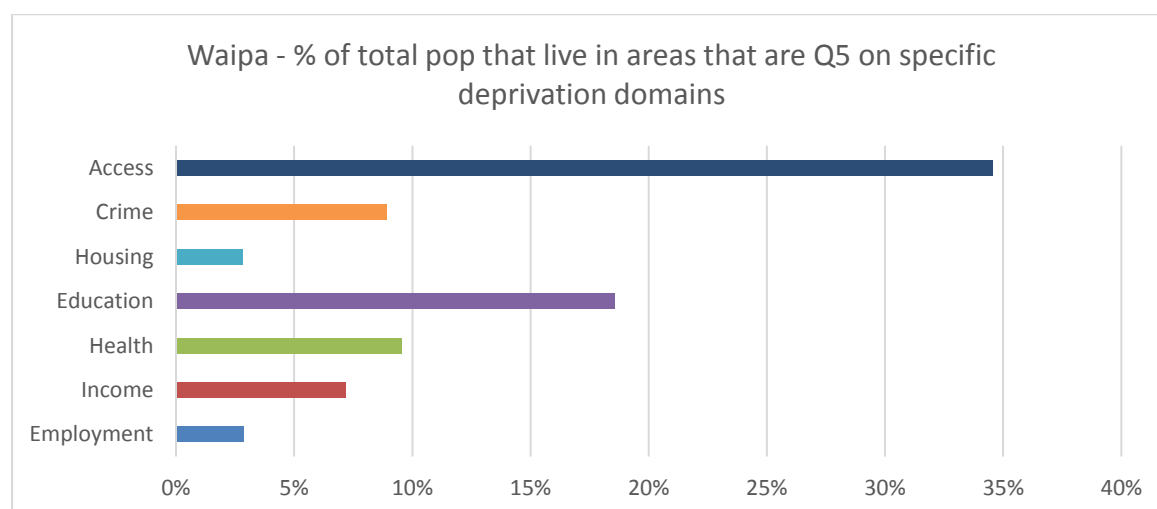
Figure 39: Deprivation quintiles for Waipa – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains, we find that access and education are the strongest deprivation issues in the Q5 zones followed by health and crime.

Figure 40: Population living in the areas of highest deprivation on specific domains - Waipa



Individual Deprivation Domains - Comparison with New Zealand Median

Table 13 shows how the domains rank against the New Zealand median. When Waipa is compared to the rest of New Zealand overall, we find that access and education are below the NZ median across all data zones. Crime, housing, employment, health and income are better than the NZ median.

Table 13: Median district deprivation ranking per domain - Waipa

Domains	Median district deprivation rank per domain
Crime	1840, 19.1% (1139 ranks) better than the NZ median
Housing	2028, 16% (952 ranks) better than the NZ median
Employment	2064, 15.3% (913 ranks) better than the NZ median
Health	2290, 11.6% (690 ranks) better than the NZ median
Income	2462, 8.7% (518 ranks) better than the NZ median
Education	3008, 0.5% (28 ranks) worse than the NZ median
Access	4318, 22.5% (1338 ranks) worse than the NZ median
NZ Median = 2979	

Waipa Summary

Waipa overall has very low deprivation with only 4 per cent of the population living in the most deprived zones – Q5. The factors that are contributing to high overall deprivation for the few Q5 zones, which are located in Te Awamutu and Kihikihi, are education, income and health.

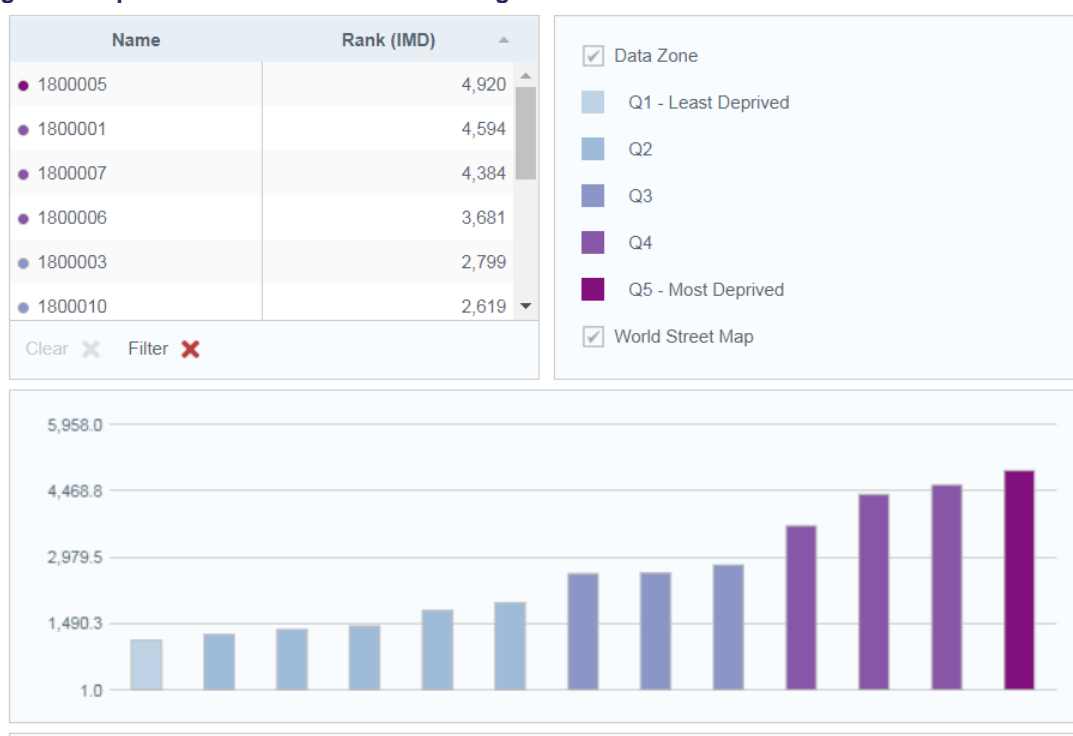
Otorohanga District

Overall IMD

Figure 41 shows the proportion of data zones in Otorohanga District that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Otorohanga's 13 data zones would be in each quintile. A total of 7.7 per cent (1/13) of data zones were among the most deprived 20 per cent in NZ (Q5), while 7.7 per cent (1/13) were in the least deprived 20 per cent (Q1).

The Otorohanga district has lower than average overall IMD deprivation, with 30.8 per cent (4/13) of its data zones either in Q4 or Q5²⁶.

Figure 41: Spread of data zones for Otorohanga – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

A total of 8 per cent of the population lives in the most deprived zones – Q5. The only Q5 zone is located in Otorohanga. This Q5 zone is characterised by high crime, health, education, income, housing and access deprivation. The only Q5 zone has a ranking of 4,920/5958 for the overall IMD. It has the following rankings for the separate domains:

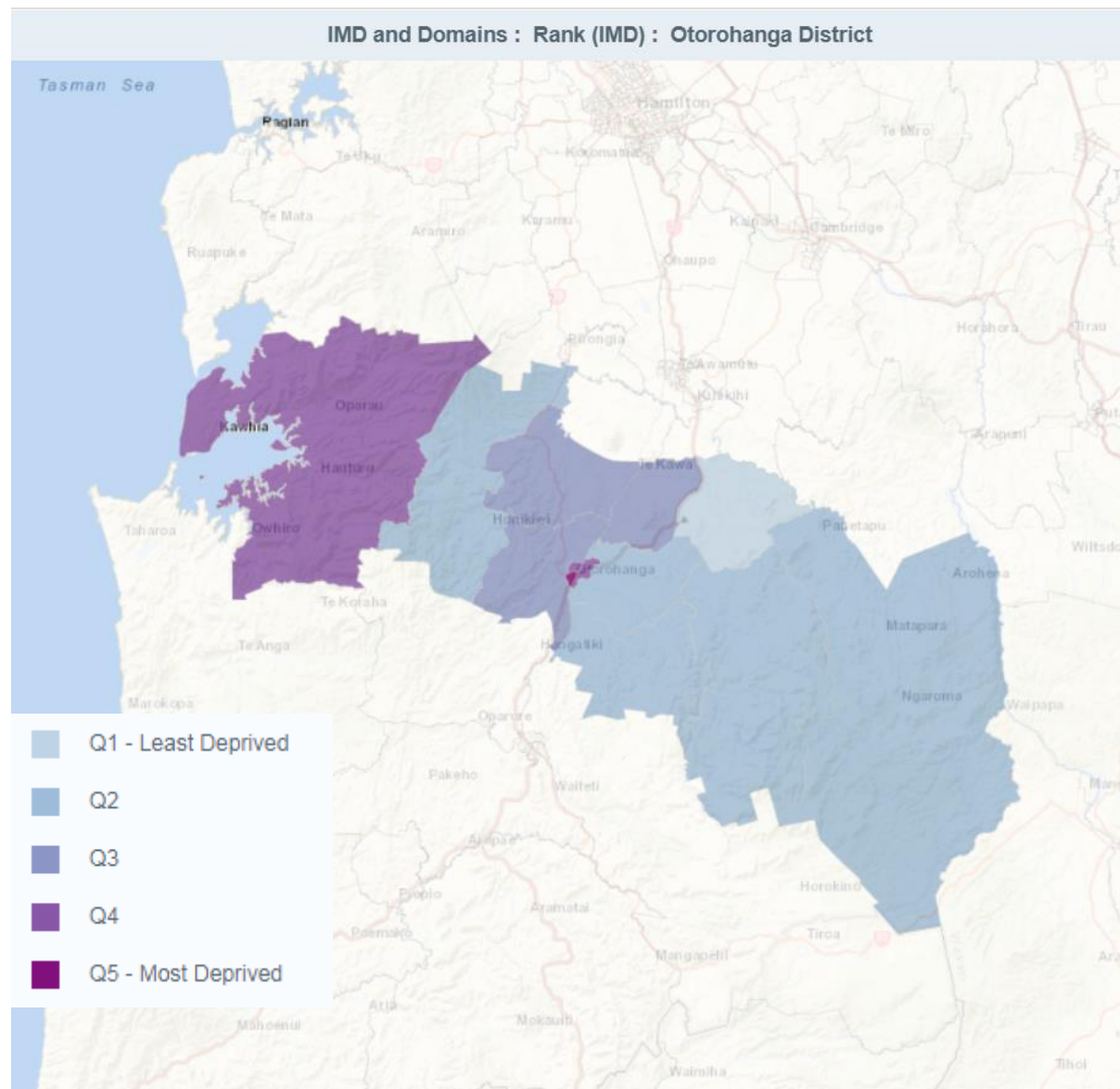
Table 14: Deprivation ranking per domain for the only Q5 zone in Otorohanga

Employment	Income	Crime	Housing	Health	Education	Access
3812	4879	5390	4783	5403	5194	4788

²⁶ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Otorohanga District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 42 shows the distribution of the overall IMD data zones across the Otorohanga district.

Figure 42: Distribution of overall IMD for Otorohanga

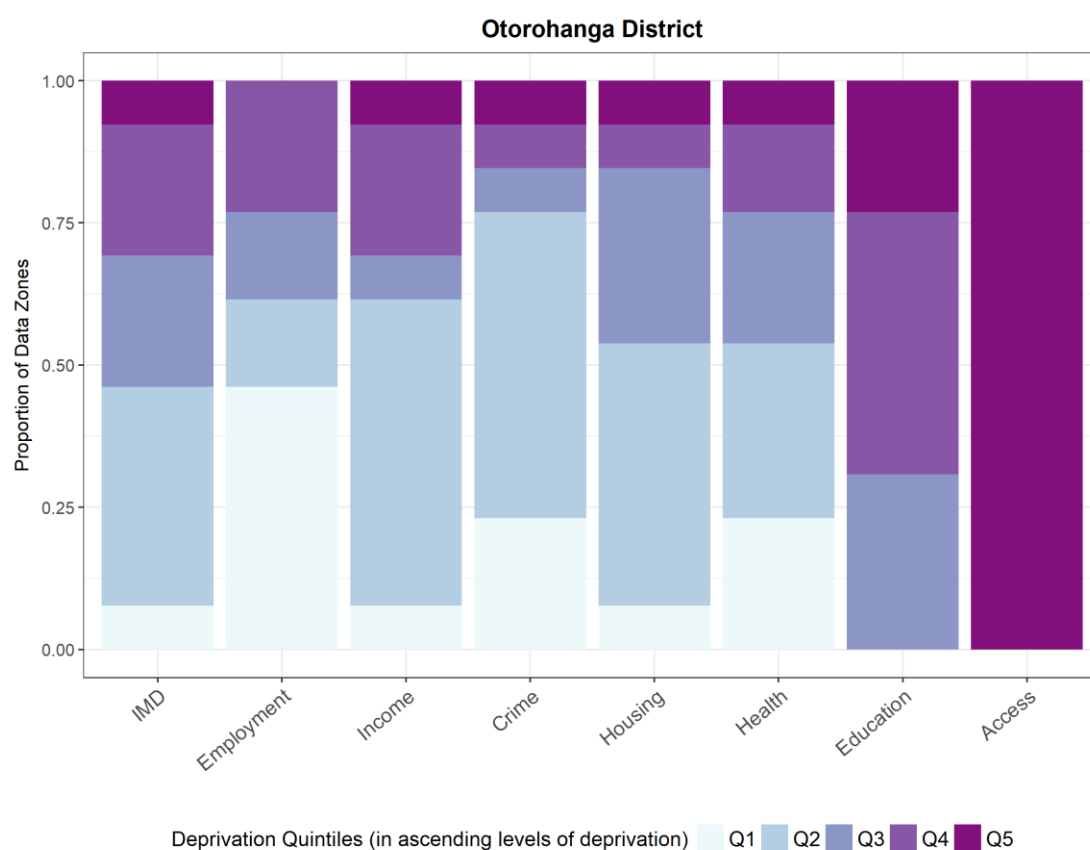


IMD domains of deprivation

Figure 43 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 43 shows that the proportion of data zones with Q5 overall IMD, employment, income, crime, housing, health deprivation were less than 20 per cent, while the proportion with Q5 education and access deprivation was greater than 20 per cent.

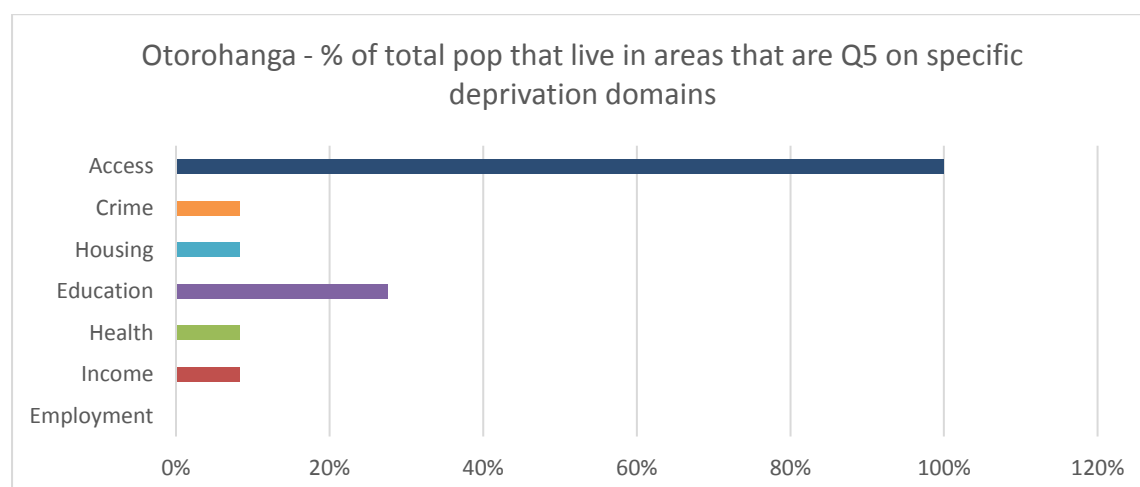
Figure 43: Deprivation quintiles for Otorohanga – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population that is living in areas that are in the highest deprivation for specific domains, we find that access and education are the strongest deprivation issues in the Q5 zones.

Figure 44: Population living in the areas of highest deprivation on specific domains - Otorohanga



Individual Deprivation Domains - Comparison with New Zealand Median

Table 15 shows how the domains rank against the New Zealand median. Otorohanga is compared to the rest of New Zealand we find that access and education are below the NZ median across all data zones. All other domains are better than the NZ median.

Table 15: Median district deprivation ranking per domain - Otorohanga

Domains	Median district deprivation rank per domain
Employment	1388, 26.7% (1589 ranks) better than the NZ median
Crime	1874, 18.5% (1105 ranks) better than the NZ median
Health	2181, 13.4% (799 ranks) better than the NZ median
Income	2301, 11.4% (679 ranks) better than the NZ median
Housing	2363, 10.4% (617 ranks) better than the NZ median
Education	3625, 10.8% (645 ranks) worse than the NZ median
Access	5468, 41.8% (2488 ranks) worse than the NZ median
NZ Median = 2979	

Otorohanga Summary

The Otorohanga district has lower than average overall IMD deprivation with a total of 8 per cent of the population live in the most deprived zones – Q5. The only Q5 zone is located in Otorohanga. This Q5 zone is characterised by high crime, health, education, income, housing and access deprivation.

When overall Otorohanga is compared to the rest of New Zealand we find that access and education are below the NZ median across all data zones. All other domains are better than the NZ median.

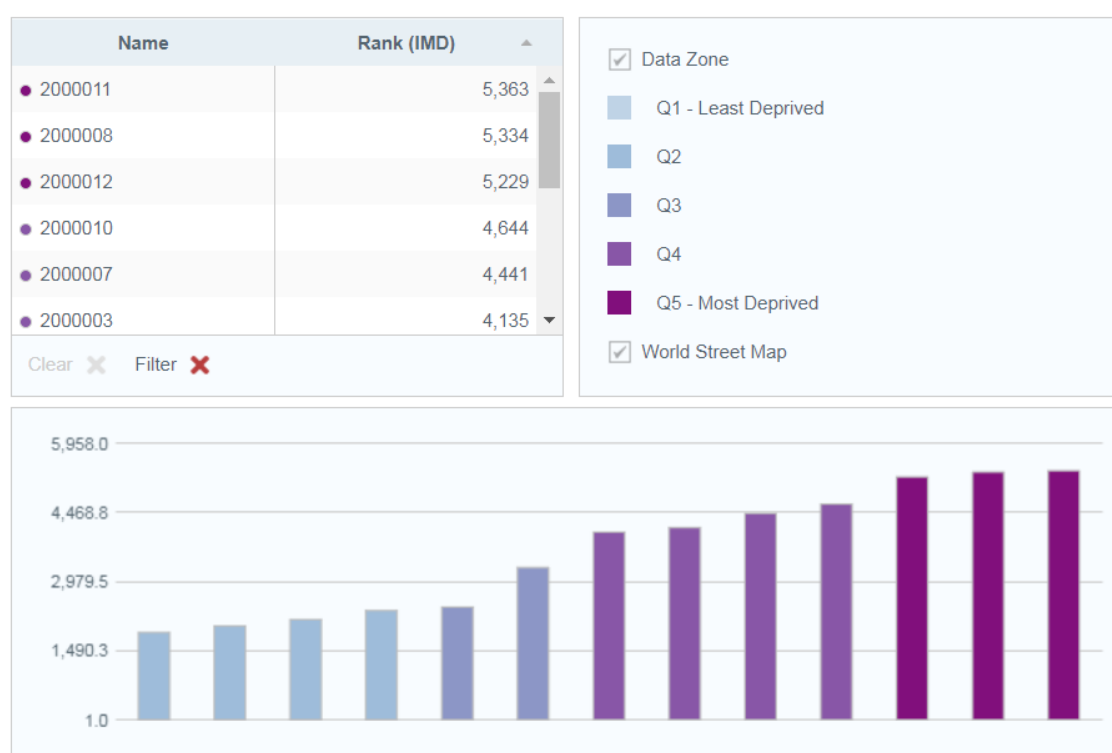
Waitomo District

Overall IMD

Figure 45 shows the proportion of data zones in Waitomo that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, we would see 20 per cent of the Waitomo's 13 data zones in each quintile. A total of 23.1 per cent (3/13) of data zones were among the most deprived 20 per cent in NZ (Q5), while 0 per cent (0/13) were in the least deprived 20 per cent (Q1).

Waitomo has higher than average overall IMD deprivation, with 53.8 per cent (7/13) of its data zones either in Q4 or Q5²⁷.

Figure 45: Spread of data zones for Waitomo – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

A total of 21 per cent of the population live in the most deprived zones – Q5. Figure 37 shows the distribution of the data zones. All of Te Kuiti is classified as either Q4 or Q5.

The overall IMD Q5 zones are located in Te Kuiti. These areas have particularly high median deprivation rankings for education (5834/5958), housing (5337/5958), income (5243/5958) and health (5229/5958), contributing to high overall deprivation. There is a different mix of deprivation domains across the three Q5 zones in Te Kuiti.

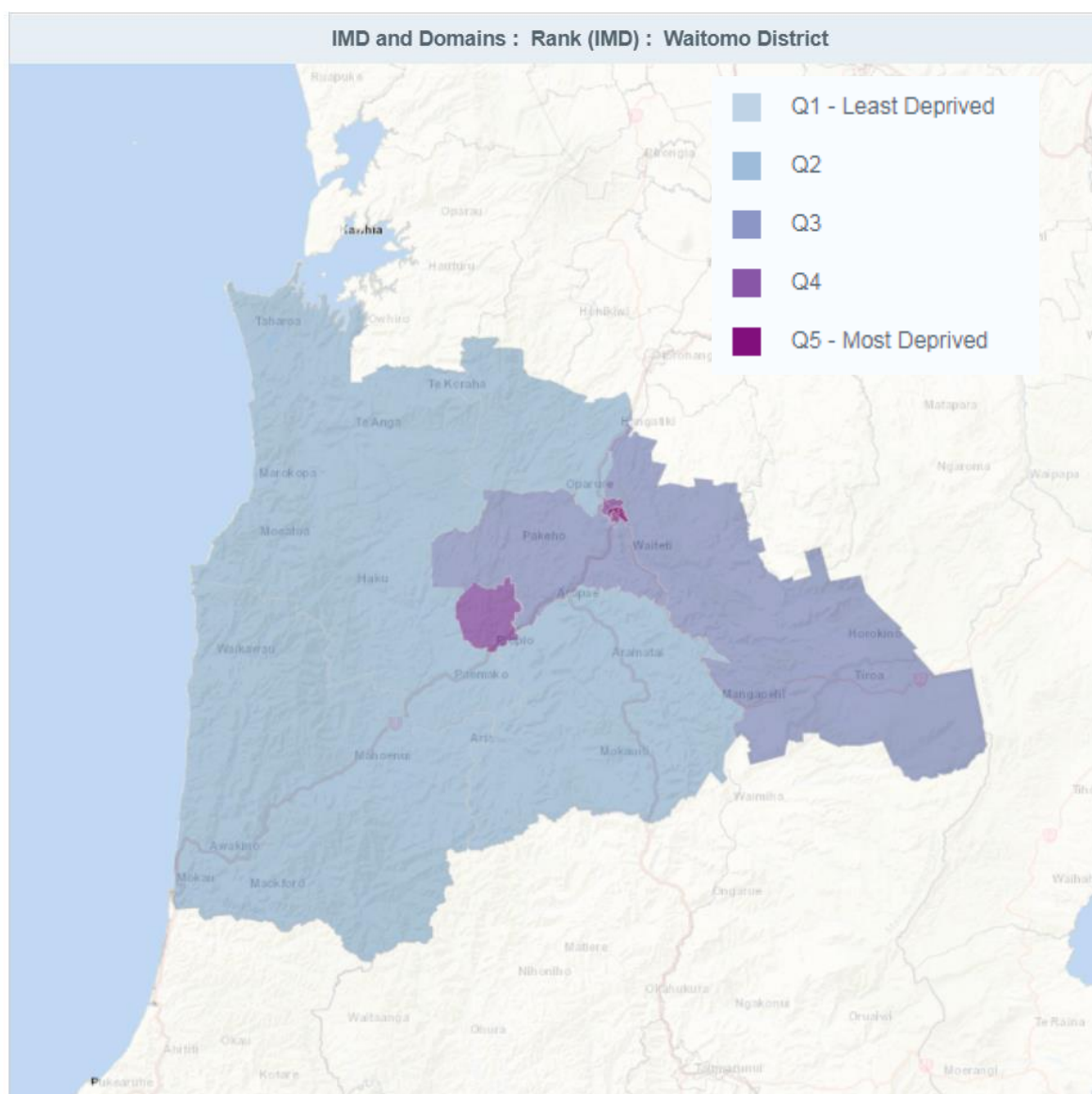
²⁷ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Waitomo District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

The zones located in Te Kuiti are characterised by education, health, housing and income deprivation with some zones also experiencing high levels of crime and employment deprivation.

Table 16: Rankings per domain for the three Q5 zones in Te Kuiti

Zone	Employment	Income	Crime	Housing	Health	Education	Access
1	4120	5046	5260	5337	5746	5880	3514
2	4998	5243	4080	4782	5229	5834	3631
3	4733	5390	2711	5520	5122	5336	4100

Figure 46: Distribution of overall IMD for Waitomo



IMD domains of deprivation

Figure 47 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 47 shows that the proportion of data zones that were Q5 for employment and crime deprivation was less than 20 per cent, while the proportion with Q5 overall IMD, income, housing, health, education and access deprivation was greater than 20 per cent.

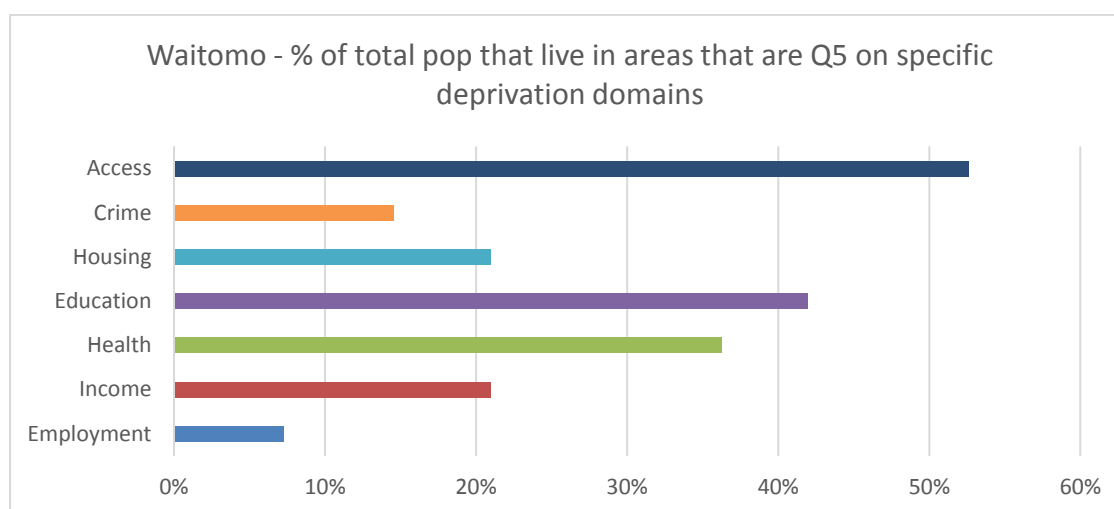
Figure 47: Deprivation quintiles for Waitomo – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains, we find that access, education and health are the strongest deprivation issues in the Q5 zones.

Figure 48: Population living in the areas of highest deprivation on specific domains - Waitomo



Individual Deprivation Domains - Comparison with New Zealand Median

Table 17 shows how the domains rank against the New Zealand median. When Waitomo overall is compared to the rest of New Zealand we find that only employment and crime rank better than the NZ median and these domains only just make it into the better category.

Table 17: Median district deprivation ranking per domain - Waitomo

Domains	Median district deprivation rank per domain
Employment	2575, 6.7% (402 ranks) better than the NZ median
Crime	2936, 0.7% (43 ranks) better than the NZ median
Health	2936, 11.5% (687 ranks) worse than the NZ median
Income	3678, 11.7% (698 ranks) worse than the NZ median
Housing	4038, 17.8% (1058 ranks) worse than the NZ median
Education	4749, 29.7% (1769 ranks) worse than the NZ median
Access	5471, 41.8% (2491 ranks) worse than the NZ median
NZ Median = 2979	

Waitomo Summary

Waitomo has higher than average overall IMD deprivation, with 53.8 per cent of its data zones either in Q4 or Q5. All of Te Kuiti is classified as either Q5 and Q4.

A total of 21 per cent of the population lives in the most deprived zones – Q5. There is a different mix of deprivation domains across the three Q5 zones in Te Kuiti. District level data can mask issues at individual data zone level. We recommend using the online mapping tools to drill down into the detail of individual data zones.

When Waitomo overall is compared to the rest of New Zealand only employment and crime rank better than the NZ median.

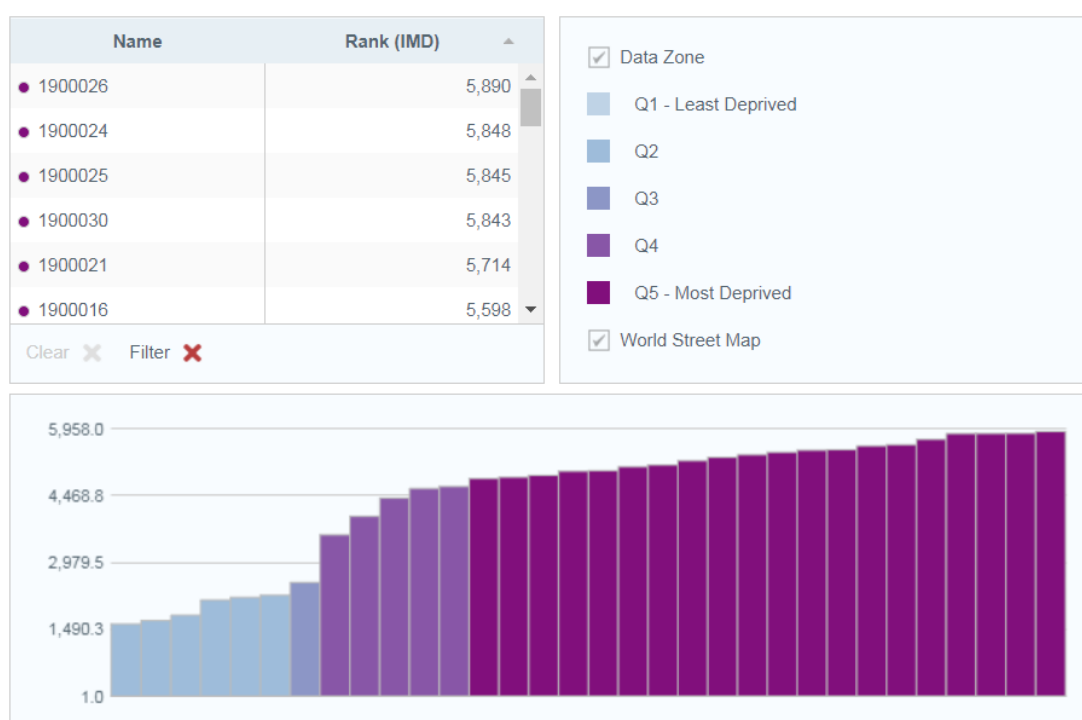
South Waikato District

Overall IMD

Figure 49 shows the proportion of data zones in South Waikato that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, we would see 20 per cent of the South Waikato's 32 data zones in each quintile. A total of 62.5 per cent (20/32) of data zones were among the most deprived 20 per cent in NZ (Q5), while 0 per cent (0/32) were in the least deprived 20 per cent (Q1).

The South Waikato district has higher than average overall IMD deprivation, with 78.1 per cent (25/32) of its data zones either in Q4 or Q5²⁸.

Figure 49: Spread of data zones for South Waikato – Q1 to Q5 for overall IMD 2013



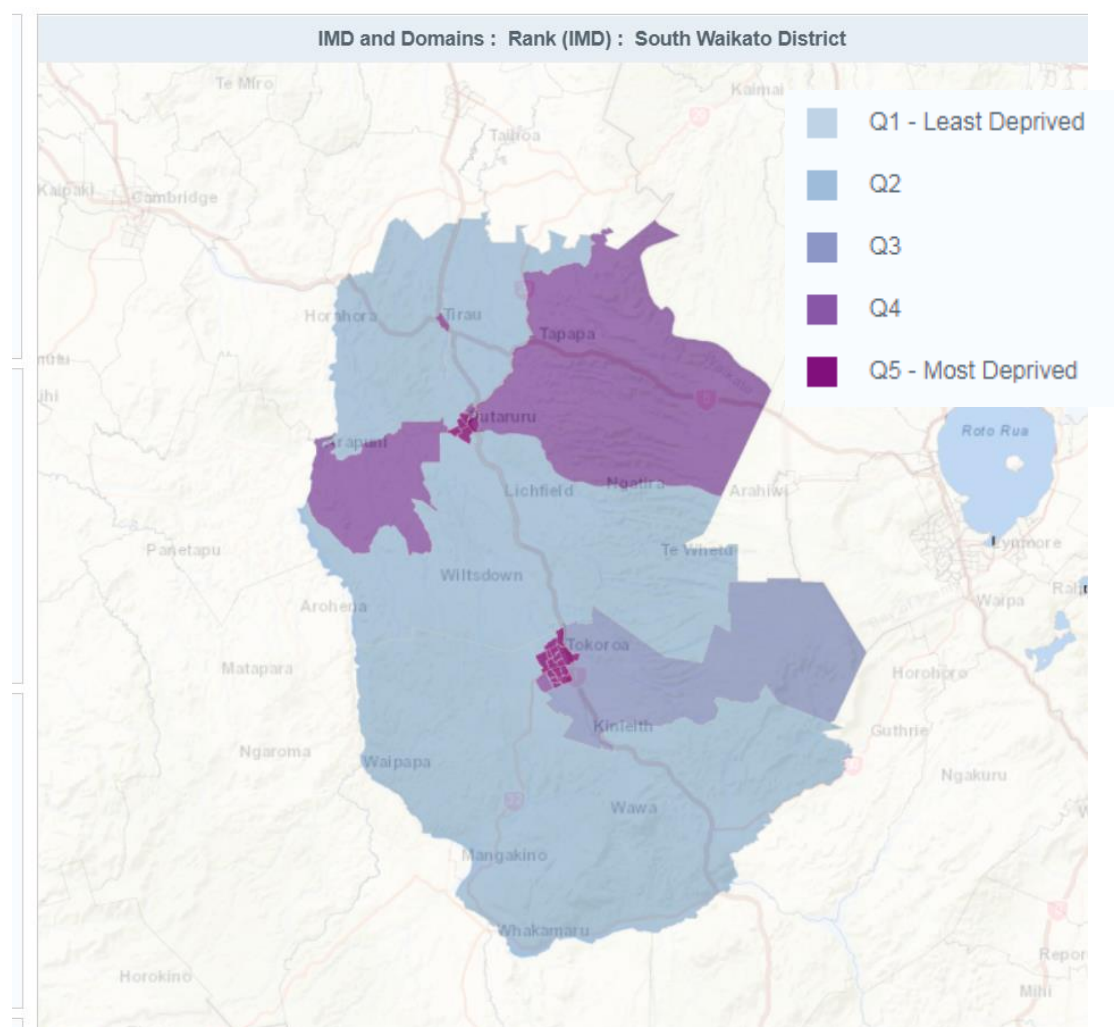
Spatial distribution of overall IMD

A total of 62 per cent of the population live in the most deprived zones – Q5. Tokoroa and Putaruru are predominantly made up of Q5 zones. The seven highest Q5 zones are all located in Tokoroa. These zones are characterised by very high employment, income and education deprivation. Some of these zones also have high crime and health deprivation. Housing deprivation is not as much of a feature as the other domains.

These areas have particularly high median deprivation rankings for employment (5644/5958), education (5692.5/5958), and health (4649.5/5958) contributing to high overall deprivation. Figure 50 shows the distribution of the data zones across the South Waikato district.

²⁸ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). South Waikato District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

Figure 50: Distribution of overall IMD for South Waikato

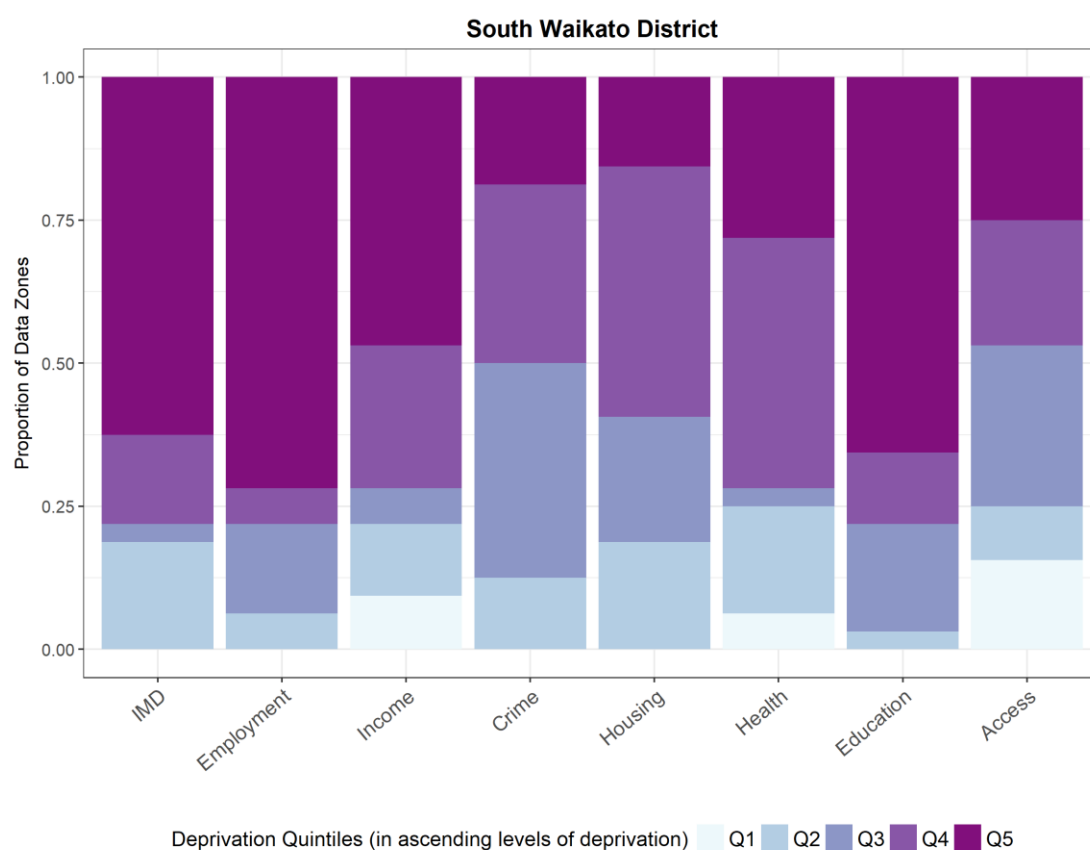


IMD domains of deprivation

Figure 51 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 51 shows that the proportion of data zones with Q5 overall crime and housing deprivation was less than 20 per cent, while the proportion with Q5 IMD, employment, income, health, education, access deprivation was greater than 20 per cent.

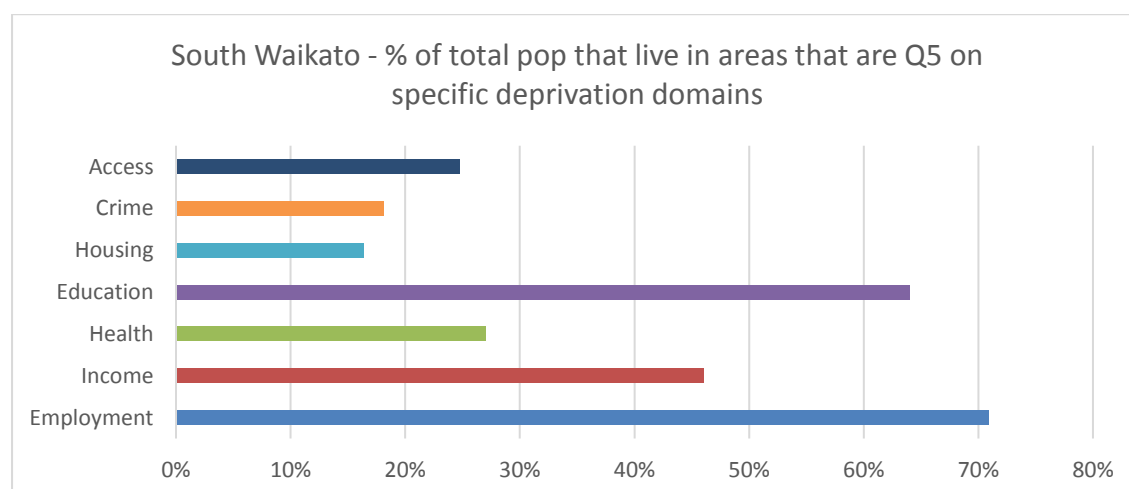
Figure 51: Deprivation quintiles for South Waikato – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population living in areas that are in the highest deprivation for specific domains, we find that employment and income deprivation are the strongest drivers of deprivation in South Waikato.

Figure 52: Population living in the areas of highest deprivation on specific domains – South Waikato



Individual Deprivation Domains - Comparison with New Zealand Median

Table 18 shows how the domains rank against the New Zealand median. When South Waikato is compared to the rest of New Zealand we find that all domains are below the NZ median across all data zones. The factors that have the smallest impact are access, crime and housing. Employment and education are major drivers of deprivation followed by income and housing.

Table 18: Median district deprivation ranking per domain – South Waikato

Domains	Median district deprivation rank per domain
Access	3354, 6.3% (374 ranks) worse than the NZ median
Crime	3702, 12.1% (723 ranks) worse than the NZ median
Housing	3902, 15.5% (922 ranks) worse than the NZ median
Health	4313, 22.4% (1333 ranks) worse than the NZ median
Income	4580, 26.9% (1600 ranks) worse than the NZ median
Education	5181, 36.9% (2201 ranks) worse than the NZ median
Employment	5407, 40.8% (2430 ranks) worse than the NZ median
NZ Median = 2979	

South Waikato Summary

The South Waikato district has higher than average overall IMD deprivation, with 78.1 per cent of its data zones either in Q4 or Q5. A total of 62 per cent of the population lives in the most deprived zones – Q5. Tokoroa and Putaruru are predominantly made up of Q5 zones. These zones are characterised by very high employment, income and education deprivation. Some of these zones also have high crime and health deprivation.

Housing deprivation is not as much of a feature as the other domains. When South Waikato is compared to the rest of New Zealand we find that all domains are below the NZ median across all data zones. Employment and education are major drivers of deprivation followed by income and housing.

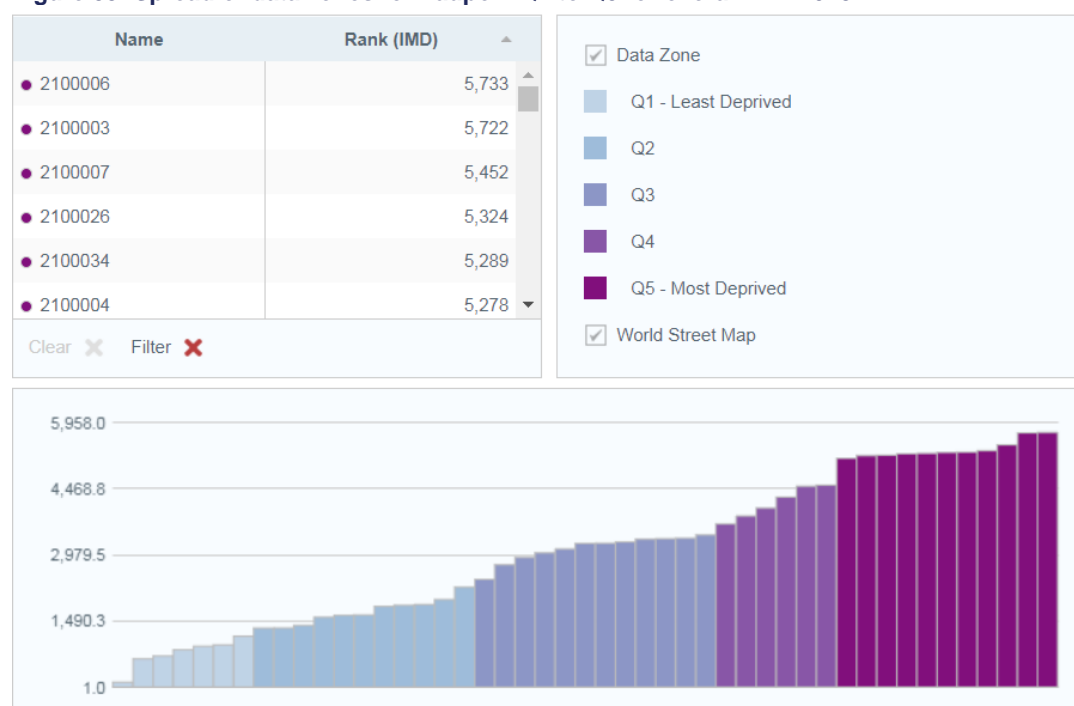
Taupo District

Overall IMD

Figure 53 shows the proportion of data zones in Taupo that fall into each IMD deprivation quintile. If the deprivation circumstances were the same for all of NZ, 20 per cent of the Taupo's 47 data zones would be in each quintile. A total of 23.4 per cent (11/47) of data zones were among the most deprived 20 per cent in NZ (Q5), while 14.9 per cent (7/47) were in the least deprived 20 per cent (Q1).

The Taupo district has lower than average overall IMD deprivation, with 36.2 per cent (17/47) of its data zones either in Q4 or Q5²⁹.

Figure 53: Spread of data zones for Taupo – Q1 to Q5 for overall IMD 2013



Spatial distribution of overall IMD

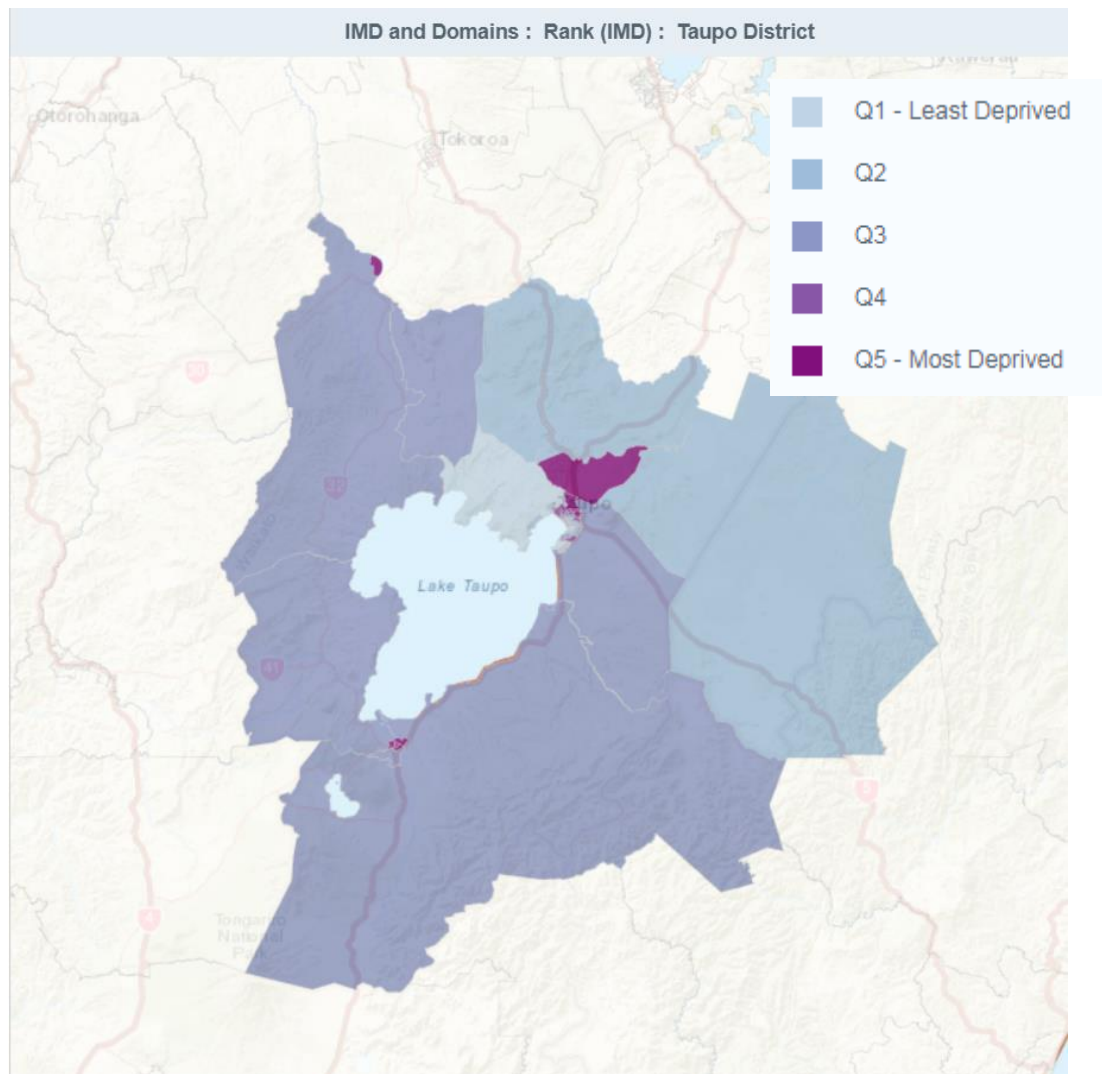
A total of 21 per cent of the population lives in the most deprived zones – Q5. Figure 54 shows the distribution of overall IMD Q5 zones for Taupo district.

Four out of the five zones that make up Turangi are Q5. Mangakino is covered by one zone and is the second highest deprived zone in the District. The rest of the Q5 zones are located in Taupo. The Q5 zones located in Turangi and Mangakino are characterised by Q5 levels of deprivation for income, health, education and access. Employment, crime and housing varies between data zones.

²⁹ The information in this section is sourced from Yong, R., Browne, M., Zhao, J., Lee, A., Shackleton, N., Crengle, S., Exeter, D. (n.d.). Taupo District Council IMD report and the University of Auckland – NZ Index of Multiple Deprivation atlas of interactive map http://www.imd.ac.nz/NZIMD_Single_animation_w_logos/atlas.html

The eleven data zones that are Q5 in the Taupo District have particularly high median deprivation rankings for education (5826/5958), income (5366/5958), crime (5327/5958) and access (4988/5958) were contributing to their high overall deprivation.

Figure 54: Distribution of overall IMD for Taupo

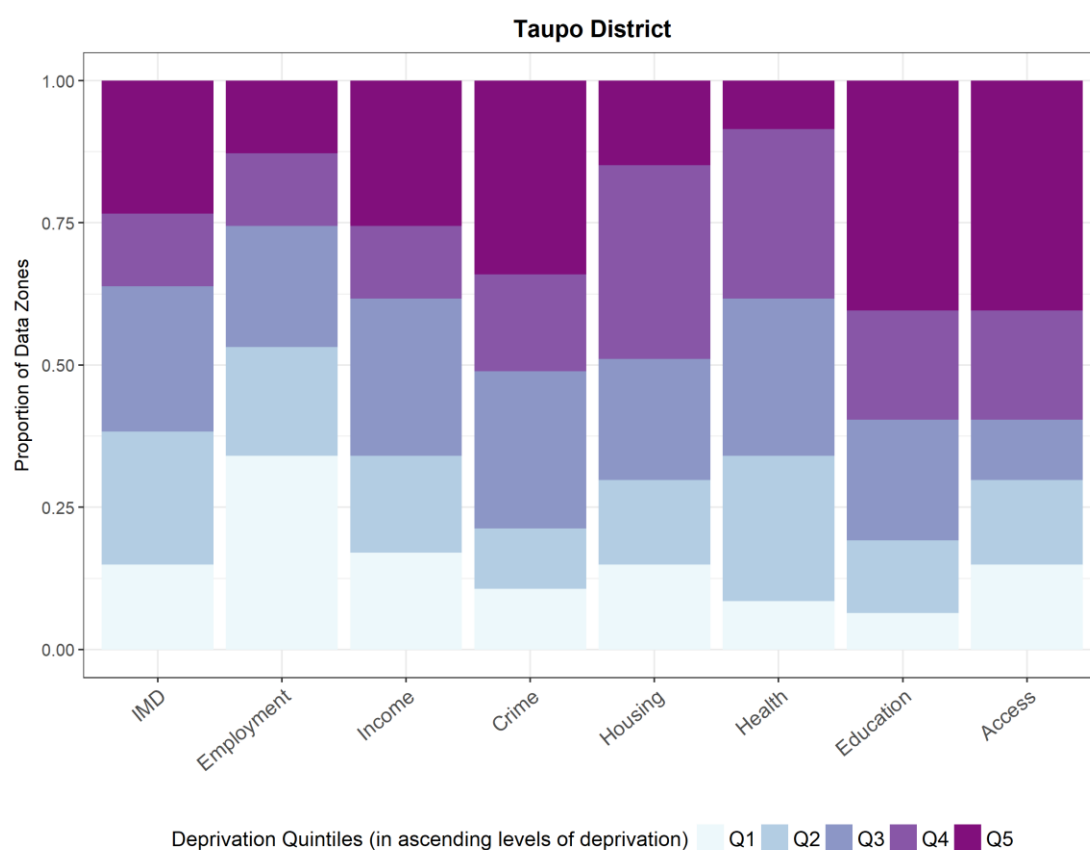


IMD domains of deprivation

Figure 55 shows the proportion of IMD data zones in each deprivation quintile for the overall IMD and for each domain. Data zones are ranked from lowest to highest deprivation based on their overall IMD score. They are also ranked from lowest to highest deprivation for each specific domain.

Figure 55 shows that the proportion of data zones with Q5 overall employment, housing and health deprivation was less than 20 per cent, while the proportion with Q5 IMD, income, crime, education and access deprivation was greater than 20 per cent.

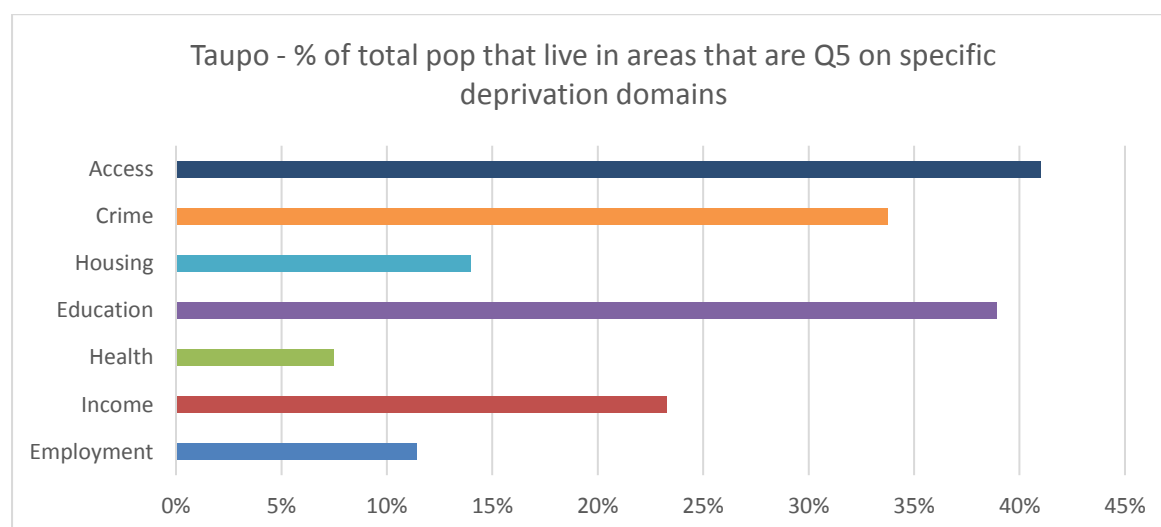
Figure 55: Deprivation quintiles for Taupo – proportion of data zones



Population living in the highest deprivation zones

When we look at the proportion of the population that is living in areas that are in the highest deprivation for specific domains, we find that access, education and crime are major factors for the Q5 zones. Health is a lesser driver.

Figure 56: Population living in the areas of highest deprivation on specific domains - Taupo



Individual Deprivation Domains - Comparison with New Zealand Median

Table 19 shows how the domains rank against the New Zealand median. When Taupo is compared to the rest of New Zealand we find that employment ranks well against New Zealand median. Income only just ranks better than the NZ median. All the rest of the domains rank below the NZ median.

Table 19: Median district deprivation ranking per domain - Taupo

Domains	Median district deprivation rank per domain
Employment	1708, 21.3% (1269 ranks) better than the NZ median
Income	2879, 1.7% (101 ranks) better than the NZ median
Health	3258, 4.7% (278 ranks) worse than the NZ median
Housing	3497, 8.7% (517 ranks) worse than the NZ median
Crime	3714, 12.3% (735 ranks) worse than the NZ median
Access	4282, 21.9% (1302 ranks) worse than the NZ median
Education	4432, 24.4% (1452 ranks) worse than the NZ median
NZ Median = 2979	

Taupo Summary

The Taupo district has lower than average overall IMD deprivation, with 36.2 per cent (17/47) of its data zones either in Q4 or Q5. A total of 21 per cent of the population live in the most deprived zones – Q5.

Education, access and crime deprivation are the biggest drivers of deprivation in Taupo.

7. Conclusions

This report has explored deprivation across the Waikato Region using two indices – the New Zealand Deprivation Index (NZDep) and the Index of Multiple Deprivation (IMD). The two indices provided different pictures of conditions in the Waikato, yet both indices demonstrate that the level of social-economic deprivation in the Waikato Region is slightly worse than overall New Zealand.

The NZDep has shown that the Waikato Region is not experiencing, at the regional level, the highest deprivation in New Zealand but is still amongst the six regions with the most deprivation challenges. Over the period 1991 – 2013 overall deprivation has improved at a sub-regional level for seven districts. Three districts either saw no change or deprivation deepened. In 2013 two Waikato districts are among the 12 most deprived districts in the North Island with more than 40 per cent of their population living in areas of NZ Dep quintile 5 deprivation. When quintile 4 is considered as well, three districts have between 70 per cent - 68 per cent of their population in NZDep4 or 5.

The IMD shows that the Waikato Region has higher than average overall IMD deprivation, with 48.1 per cent of its data zones either in quintile 4 or 5. When the Waikato Region is compared to the rest of New Zealand on individual domains, only housing ranks better than the NZ median. All other domains are worse than the NZ median with education the most prevalent type of deprivation in the Waikato.

This report also presented profiles on each district within the Waikato Region. The analysis shows that the Waikato Region is made up of very disparate communities. At the sub-regional level, no two communities have the same mix of drivers and some experience significant deprivation.

District level data can mask specific deprivation at the community level. On specific domains, parts of the Waikato Region rank very high. For instance, Hamilton has the 2nd most deprived data zone in the New Zealand for income (out of a total of 5958 data zones across New Zealand). Hamilton also has the 2nd most deprived data zone for crime in the country and the 3rd for health. Waharoa just north of Matamata is the 2nd most deprived data zone for education. Tokoroa has the 10th most deprived data zone for employment in the country.

There is a correlation between certain types or domains of deprivation. For areas that are overall IMD quintile 5, employment, income, health and education deprivation are the most prevalent factors. The presence or absence of health and crime in the most deprived areas does not follow the same pattern. Crime hot spots are clustered in towns rather than the rural areas. Where crime hot spots are located within a town or city appears to connect more to the type of crime that is predominant in that location. In Hamilton, many crime nodes are located in the central city, shopping malls, hospital and university. For the small towns in the Waikato this pattern is not so apparent.

Overall this report has shown that it is simplistic to assess deprivation at a regional level. Each data zone has a different mix of drivers across each district. This has policy implications for considering the use of place-based policies versus blanket policies to improve social outcomes. It will be

important to consider not only the different drivers and targeting interventions to address those but also how the underlying drivers work together to deepen deprivation. This research suggests that central government, districts, social providers and others will need to consider the different drivers in each locality and how the underlying drivers work together to deepen deprivation in their communities. Interventions will need to be targeted to address the unique factors in each community.

Appendix 1 - Methodology

New Zealand Deprivation index

The NZDI is a measure of socio-economic status for households and is based on nine variables. A high NZDI score (high deprivation) relates to low socio-economic status and a low NZDI score (low deprivation) relates to high socio-economic status. For the purpose of comparison, the Social Deprivation Index is presented as a scale, ranking small areas from the least deprived to the most deprived. The mean is 1000 index points and the higher the number the greater the deprivation. For the index, a lower the number indicates a less deprived area, a higher number indicates a more deprived area.³⁰

NZDep2013 combines nine variables from the 2013 census which reflect eight dimensions of deprivation. NZDep2013 combines the following census data (calculated as proportions for each small area):

Dimension of deprivation	Description of variable (in order of decreasing weight in the index)
Communication	People aged <65 with no access to the Internet at home
Income	People aged 18-64 receiving a means tested benefit
Income	People living in equivalised* households with income below an income threshold
Employment	People aged 18-64 unemployed
Qualifications	People aged 18-64 without any qualifications
Owned home	People not living in own home
Support	People aged <65 living in a single parent family
Living space	People living in equivalised* households below a bedroom occupancy threshold
Transport	People with no access to a car

*Equivalisation: methods used to control for household composition.³¹

NZDep can be displayed as deciles or quintiles. Each NZDep quintile contains about 20 percent of small areas (meshblocks or census area units) in New Zealand.

- Quintile 1 represents people living in the least deprived 20 percent of small areas
- Quintile 5 represents people living in the most deprived 20 percent of small areas.

At a national-level there are equal numbers of households in each of the ten categories but at a sub-national level there can be clusters of low and high deprivation meshblocks in a region or district. An

³⁰ .idcommunity - <http://profile.idnz.co.nz/thames-coromandel/deprivation-index?WebID=100>

³¹ Atkinson, J., Salmond, C., and Crampton, P. (2014). NZDEP2013 Index of Deprivation. Department of Public Health, University of Otago, Wellington; Division of Health Sciences, University of Otago.

area's decile score does not necessarily mean all individuals living in that area experience an equivalent level of deprivation.³²

Data Limitations

It is difficult to compare changes in the level of deprivation across the region over time because of changes in meshblock boundaries and changes to some of the census variables used. The telecommunication variable used in previous versions of NZDep – no access to any phone at home – was dropped in 2013 and replaced by another telecommunication variable – no access to the Internet at home. Another variable – household income – was also very slightly modified as a result of changed categories in the Census.

Caution

- It is important to be aware that the indicator is a proxy or partial measure.
- The index measures relative socio-economic deprivation, not absolute socio-economic deprivation, therefore 10 per cent of areas will always fall into the most deprived decline of NZDep scores.

Certain variables which are used in creating the index, such as 'no access to a car' or 'no access to the internet', may for some individuals be a lifestyle choice rather than a reflection of economic hardship. The authors of the 2013 New Zealand Deprivation Index caution that by definition 10 per cent of small areas will always fall into the most deprived group—irrespective of the absolute deprivation in those areas at that time, or the overall wealth of the country.

Index of Multiple Deprivation

The New Zealand Index of Multiple Deprivation (IMD) is a set of tools for identifying concentrations of deprivation in New Zealand. It measures deprivation at the neighbourhood-level in custom designed data zones that have an average population of 712. The IMD uses routinely collected data from government departments, census data and methods comparable to current international deprivation indices to measure different forms of disadvantage.

It is comprised of 28 indicators grouped into seven domains of deprivation: employment, income, crime, housing, health, education and access to services. The IMD is the combination of these seven domains, which may be used individually or in combination to explore the geography of deprivation and its association with a given health or social outcome.³³

Figure 1 shows the IMD's 28 indicators and seven domains with their weightings.

³² Ministry of Health Neighbourhood deprivation - <https://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics/nga-awe-o-te-hauora-socioeconomic-determinants-health/neighbourhood-deprivation>

³³ The New Zealand Indices of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand Daniel John Exeter, Jinfeng Zhao, Sue Crengle, Arier Lee, Michael Browne

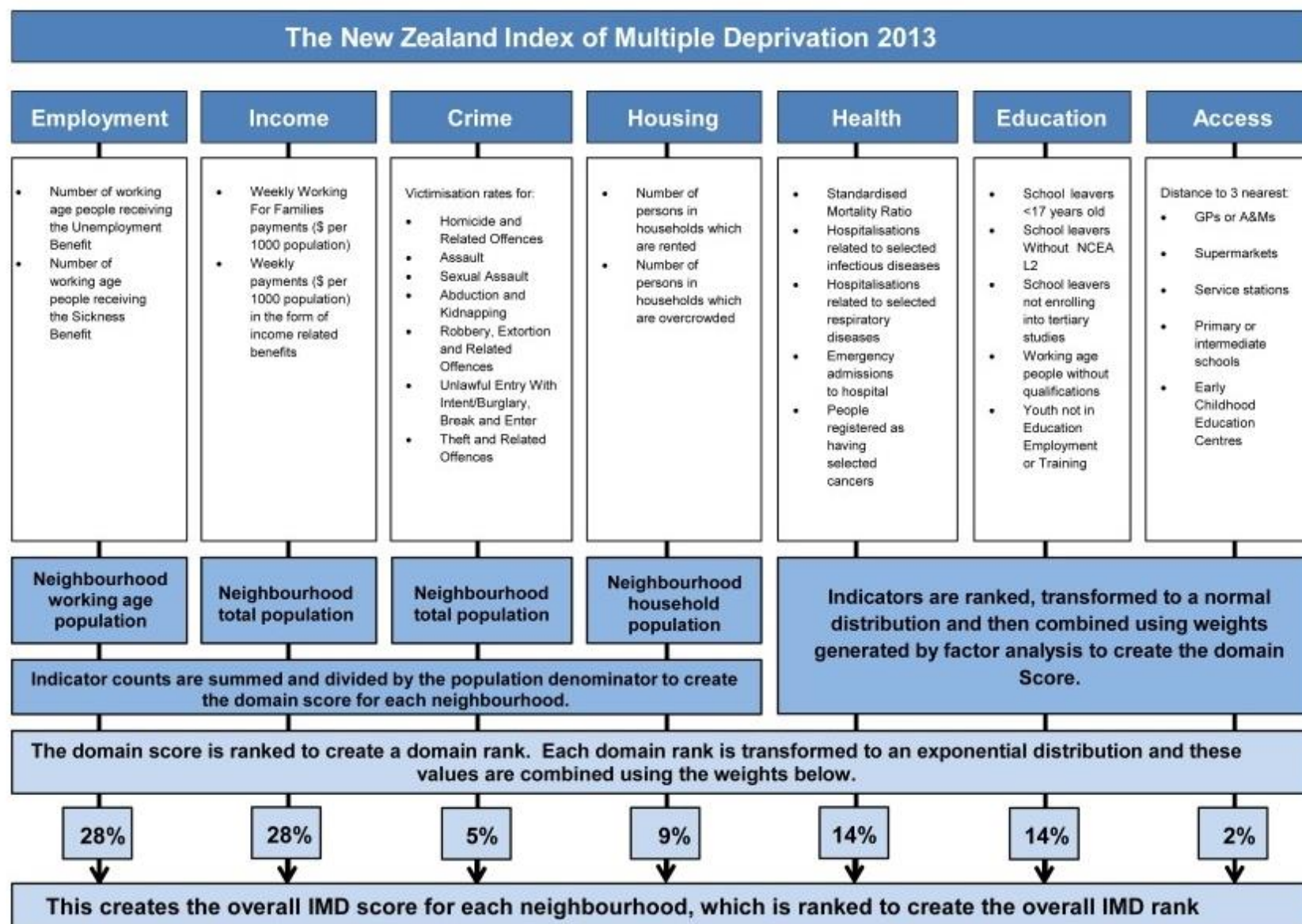


Figure 1. Developing the NZ Indices of Multiple Deprivation: An overview of indicators, domains and weights.
 Adapted from Figure 4.2 SIMD 2012 Methodology, in Scottish Index of Multiple Deprivation 2012. Edinburgh: Scottish Government (Crown copyright 2012).

Disclaimer Statement

The opinions, findings, recommendations, and conclusions expressed are those of the researchers, not Statistics NZ, the University of Auckland or the Waikato Plan Leadership Group.

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Access to the data presented was managed by Statistics New Zealand under strict micro-data access protocols and in accordance with the security and confidentiality provisions of the Statistic Act 1975. IMD findings are not Official Statistics.



Waikato : he reo kotahi
Waikato : one voice