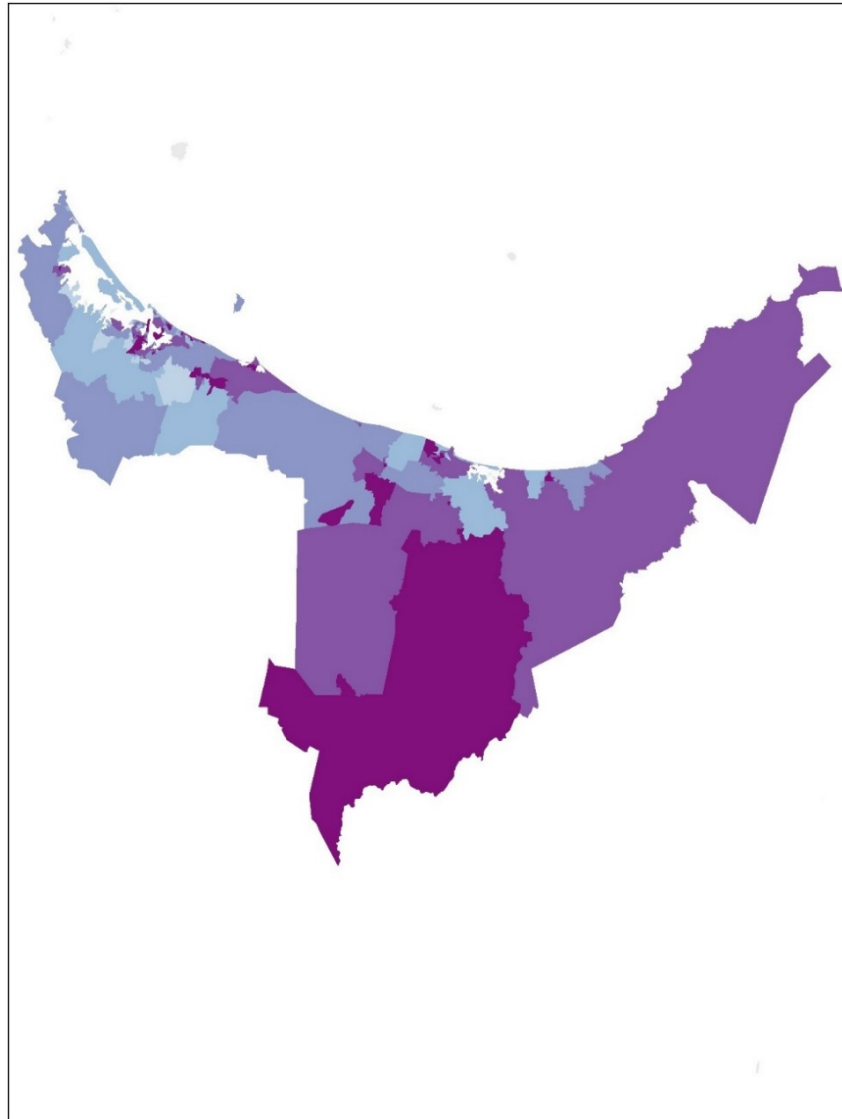


# A deprivation and demographic profile of the Bay of Plenty DHB



Bay of Plenty DHB, showing overall IMD deprivation  
with the most deprived areas shaded darkest

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## Statistics New Zealand Disclaimer

The results in this report are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand. The opinions, findings, recommendations, and conclusions expressed in this paper are those of the author(s) not Statistics NZ or the University of Auckland.

Access to the anonymised data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation and the results in this paper have been confidentialised to protect these groups from identification. Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from [www.stats.govt.nz](http://www.stats.govt.nz).

The results are based in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form, or provided to Inland Revenue for administrative or regulatory purposes. Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

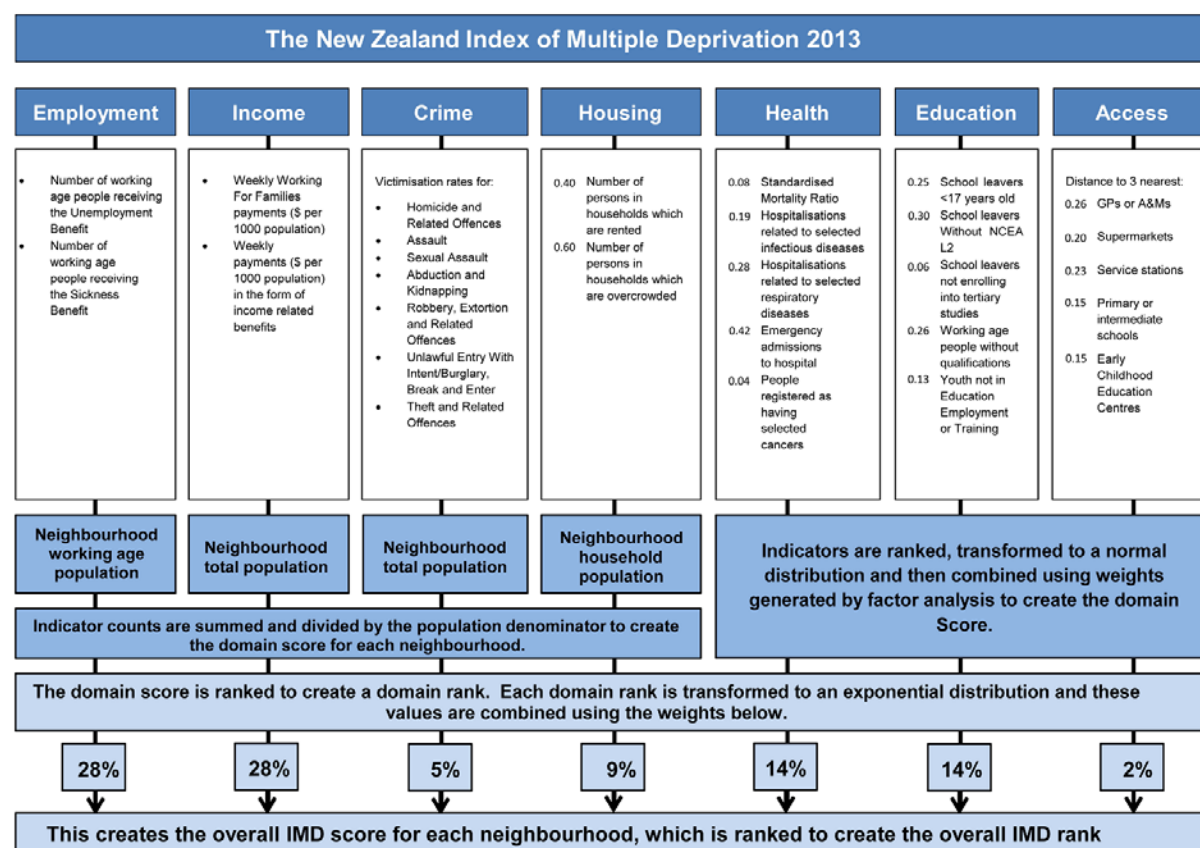
## Acknowledgments

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## A deprivation and demographic profile of the Bay of Plenty DHB

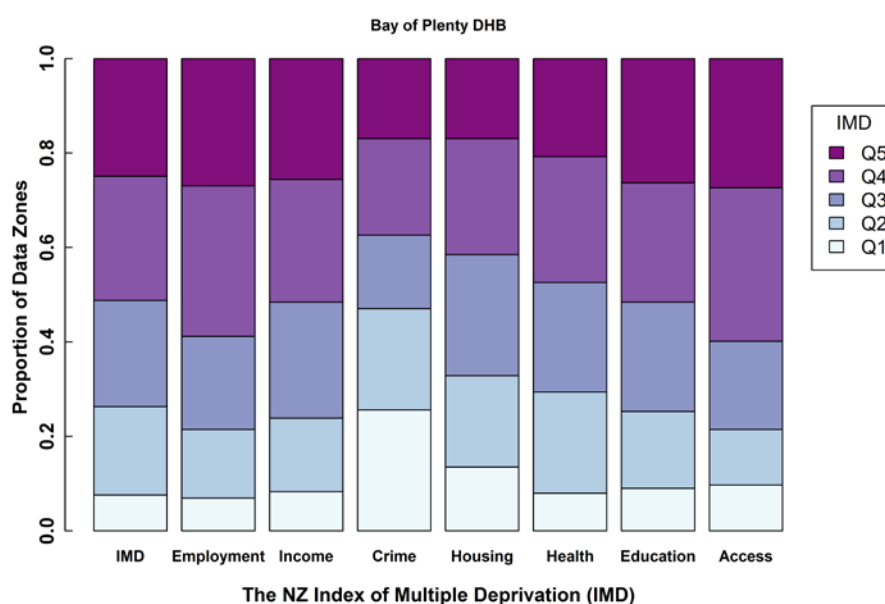
The New Zealand Index of Multiple Deprivation (IMD) allows one to look at disadvantage in overall terms, as well as in terms of seven domains of deprivation: Employment, Income, Crime, Housing, Health, Education and Access. The seven domains are weighted to reflect the relative importance of each domain in representing the key determinants of socio-economic deprivation, the adequacy of their indicators and the robustness of the data that they use. Figure 1 shows the IMD's 28 indicators and weightings of the seven domains.

The IMD measures deprivation at the neighbourhood level using custom designed data zones that were specifically developed for social and health research. The New Zealand (NZ) land mass has 5,958 neighbourhood-level data zones that have a mean population of 712 people. In urban settings, they are just a few streets long and a few streets wide. Data zones are ranked from the least to most deprived (1 to 5958) and grouped into five quintiles. Q1 (light shading) represents the least deprived 20% of data zones in the whole of NZ; while Q5 (dark shading) represents the most deprived 20%. This multidimensional deprivation information is combined with demographic information from the 2013 census to produce a DHB profile.



**Figure 1. Flow diagram showing the IMD, its 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).

The stacked bar chart in Figure 2 shows the proportion of data zones in the Bay of Plenty DHB (BOPDHB) that belonged to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same as all of NZ, we would see 20% of the BOPDHB's 289 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 deprivation was greater than 20% for overall IMD deprivation and for all domains except for Crime and Housing. The proportion with Q4 deprivation was greater than 20% for all domains. The BOPDHB has high levels of overall IMD deprivation, with 51.2% (148/289) of its data zones in Q4 or Q5.



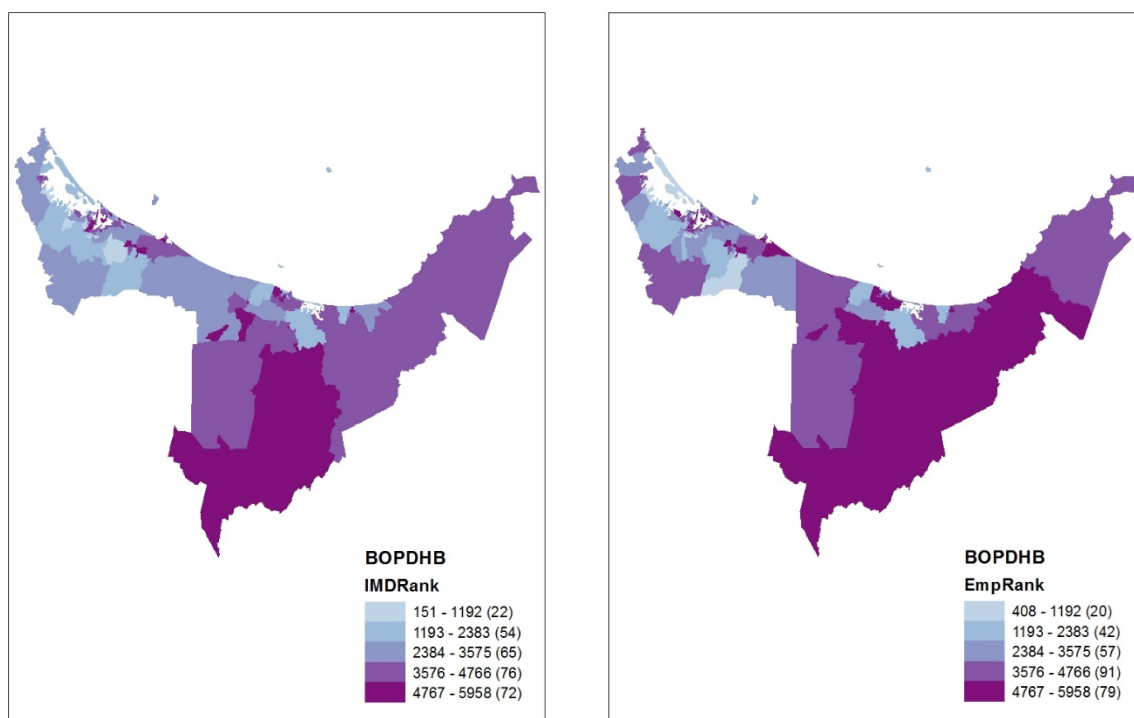
**Figure 2. Stacked bar chart showing overall deprivation and seven domains in the BOPDHB**

Table 1 shows summary statistics by domain for the 72 BOPDHB data zones that were among NZ's 20% most deprived for the overall IMD, and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Employment (5556), Education (5394), Income (5368), Health (5023) and Housing (4910) were contributing to high overall IMD deprivation in these 72 data zones in 2013. Please note that domains carry different weights in the IMD (see Figure 1).

Min, max and median <sup>1</sup> deprivation ranks by domain for 75 data zones with Q5 IMD								
	IMD	Employment	Income	Crime	Housing	Health	Education	Access
Min	4823	4008	3172	1053	3163	2922	3572	132
Max	5938	5958	5947	5935	5782	5922	5951	5934
Median	5397	5556	5368	4661	4910	5023	5394	2708

**Table 1. Minimum, maximum and median deprivation ranks by domain for 75 data zones in the BOPDHB with Q5 IMD deprivation**

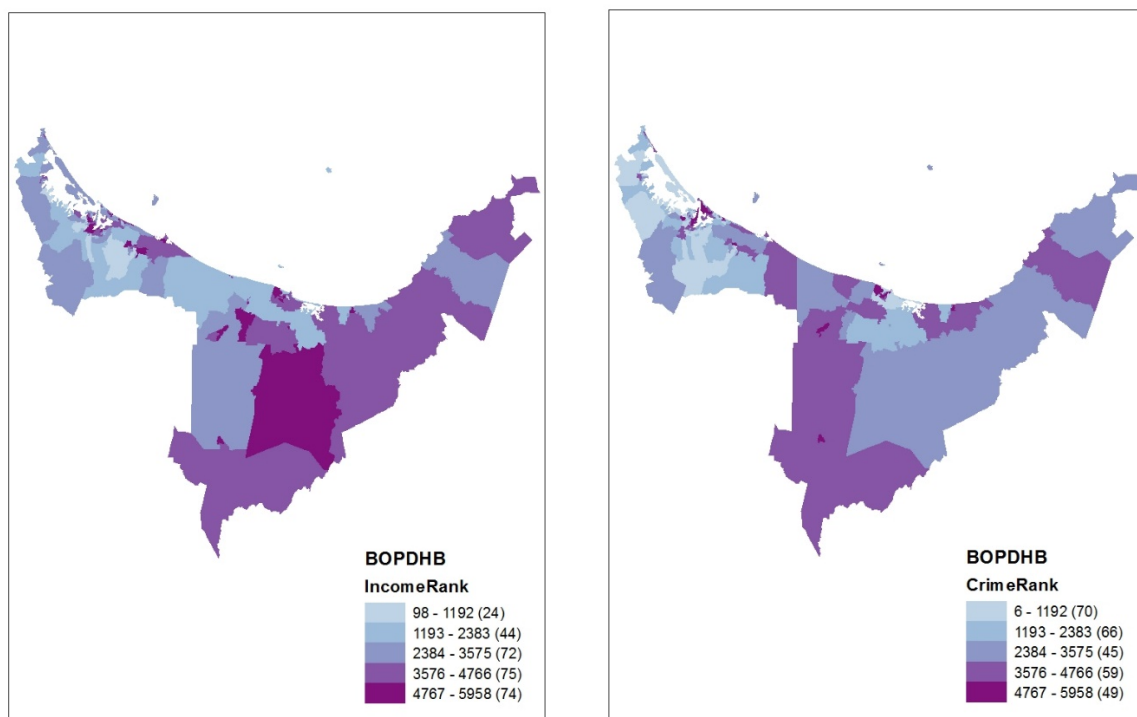
<sup>1</sup> When discussing the 20% most deprived data zones, ranks will usually be skewed, so it is better to discuss the median rank (the middle value) rather than the mean rank (the average, which can be disproportionately affected by very high values).



**Figure 3. Distribution of overall IMD and employment deprivation in the BOPDHB**

The values in brackets in the legends of the maps that follow are counts of data zones in the relevant quintile. The map for overall deprivation (IMD) on the left of Figure 3 shows that there are high levels of Q5 disadvantage in the BOPDHB. 24.9% (72/289) of Data Zones in the BOPDHB were among the most deprived 20% in NZ (Q5), and only 7.6% (22/289) were in the least deprived 20% (Q1). The median IMD rank in the BOPDHB was 3610, 10.6% (631 ranks) worse than the NZ median of 2979. There were three large rural data zones with Q5 overall deprivation in the southern part of the DHB, and three more around Kawerau and Te Teko, but the majority of Q5 data zones were located in urban areas such as Tauranga and Whakatane. Urban data zones are difficult to see on these maps, so we suggest that readers use the interactive maps at the [IMD website](#) to explore the BOPDHB further.

The map of the Employment Domain on the right of Figure 3 reflects the proportion of working age people who were receiving the Unemployment or Sickness Benefits in 2013. In the BOPDHB, 27.3% (79/289) of data zones were in the 20% most deprived in NZ for the Employment Domain, while only 6.9% (20/289) were in the least deprived 20%. The median employment deprivation rank in the BOPDHB was 3857, 14.7% (878 ranks) worse than the NZ median of 2979. High (Q5) levels of employment deprivation were prominent in large rural data zones stretching from Murupara to Houopoto and in most urban areas from Katikati to Opotiki.

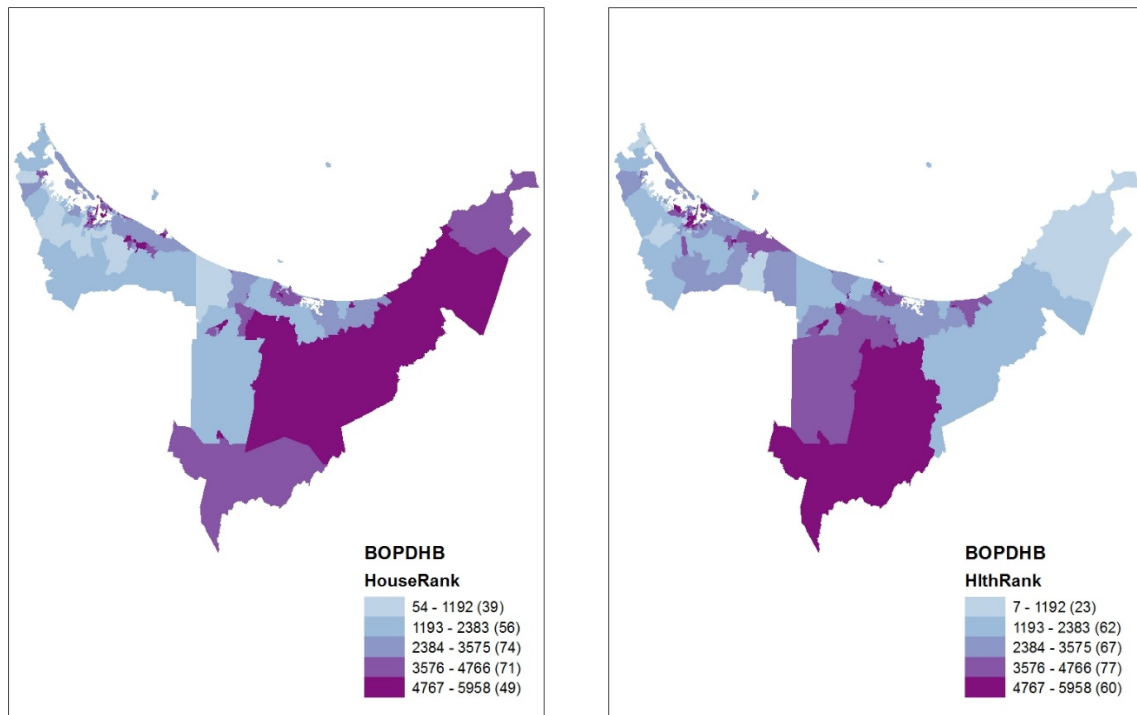


**Figure 4. Distribution of income and crime deprivation in the BOPDHB**

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. In the BOPDHB, 25.6% (74/289) of data zones were among NZ's 20% most income deprived, and 8.3% (24/289) were in the 20% least income deprived. The median income deprivation rank in the BOPDHB was 3629, 10.9% (650 ranks) worse than the NZ median. High (Q5) levels of income deprivation occurred in large rural data zones around the Ruatoki and Waimana Valleys and around Murupara, Kawerau, Te Teko and Te Puke, but many occurred in the suburbs of Tauranga.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the BOPDHB, 17% (49/289) of data zones were among NZ's 20% most deprived for the Crime Domain, while 25.6% (74/289) were among NZ's 20% least deprived. The median crime deprivation rank in the BOPDHB was 2615, 6.1% (364 ranks) better than the NZ median. High (Q5) rates of crime victimisation occurred in most medium to large sized towns in the BOPDHB and in 24 data zones in Tauranga. There were no Q5 rates of crime victimisation in rural parts of the BOPDHB.

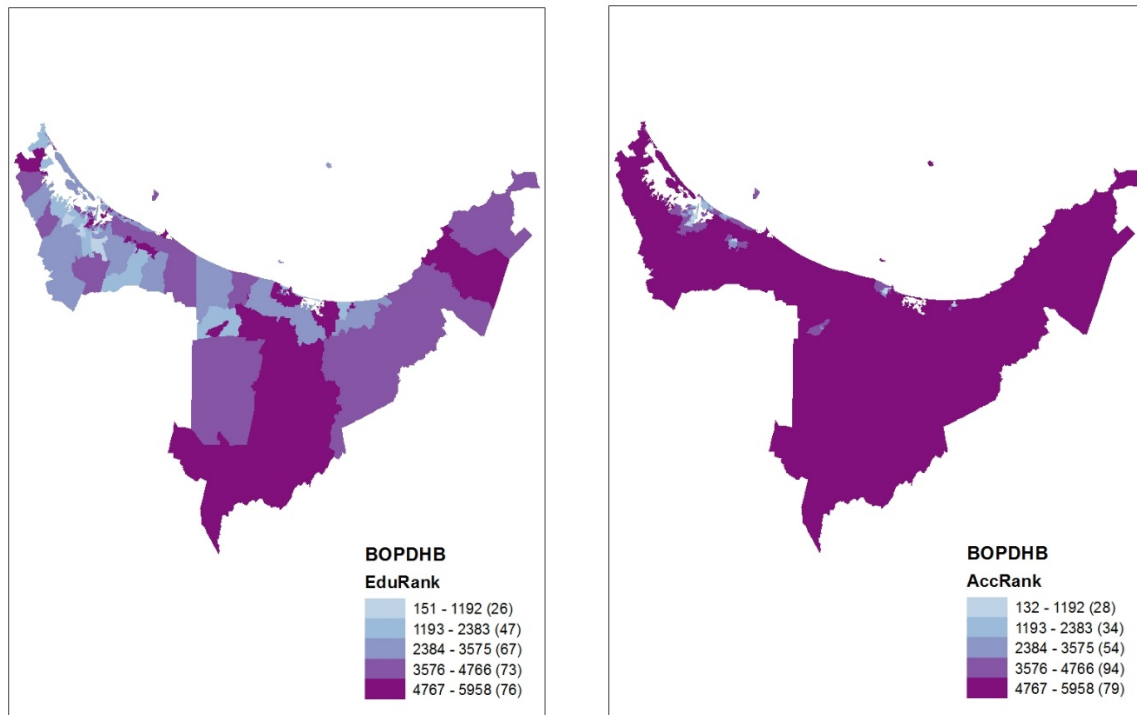




**Figure 5. Distribution of housing and health deprivation in the BOPDHB**

The Housing Domain measures the proportion of people living in overcrowded households and rented dwellings. In the BOPDHB, 17% (49/289) of data zones were among the 20% most deprived in NZ, and 13.5% (39/289) of data zones were among the 20% least deprived. The median housing deprivation rank in the BOPDHB was 3002, only 0.4% (23 ranks) worse than the NZ median. High (Q5) levels of housing deprivation were prominent in the large rural data zones stretching from Murupara to Te Kaha and in towns such as Te Puke, Maketu, Kawerau and Opotiki. In Tauranga, there were 23 Q5 housing deprived data zones.

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. In the BOPDHB, 20.8% (60/289) of data zones were among the 20% most health deprived in NZ, and only 8% (23/289) were among the least deprived 20%. The median health deprivation rank in the BOPDHB was 3440, 7.7% (461 ranks) worse than the NZ median. High (Q5) levels of health deprivation occurred in large rural data zones around Murupara and the Ruatoki and Waimana Valleys and in most towns. In Tauranga, there were 30 Q5 health deprived data zones.



**Figure 6. Distribution of education and access deprivation in the BOPDHB**

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). In the BOPDHB, 26.3% (76/289) of data zones were among NZ's 20% most education deprived, and only 9% (26/289) were in the least deprived 20%. The median education deprivation rank in the BOPDHB was 3650, 11.3% (671 ranks) worse than the NZ median. High (Q5) levels of education deprivation occurred in the large rural data zones of the Ruatoki and Waimana Valleys and around Te Kaha and in smaller rural area such as Ohiwa and Katikati. Tauranga had 29 data zones with Q5 education deprivation, as did most urban areas in the BOPDHB.

The Access Domain measures the distance from the centre of each neighbourhood to the nearest three GPs, supermarkets, service stations, schools and early childhood education centres. In the BOPDHB, 27.3% (79/289) of data zones were among NZ's 20% most access deprived, and only 9.7% (28/289) were in NZ's 20% least deprived. The median access deprivation rank in the BOPDHB was 3979, 16.8% (1000 ranks) worse than the NZ median. Predictably, rural parts of the BOPDHB were Q5 access deprived. The only places with Q1 access to services were Tauranga, Te Puke, Whakatane and Opotiki.



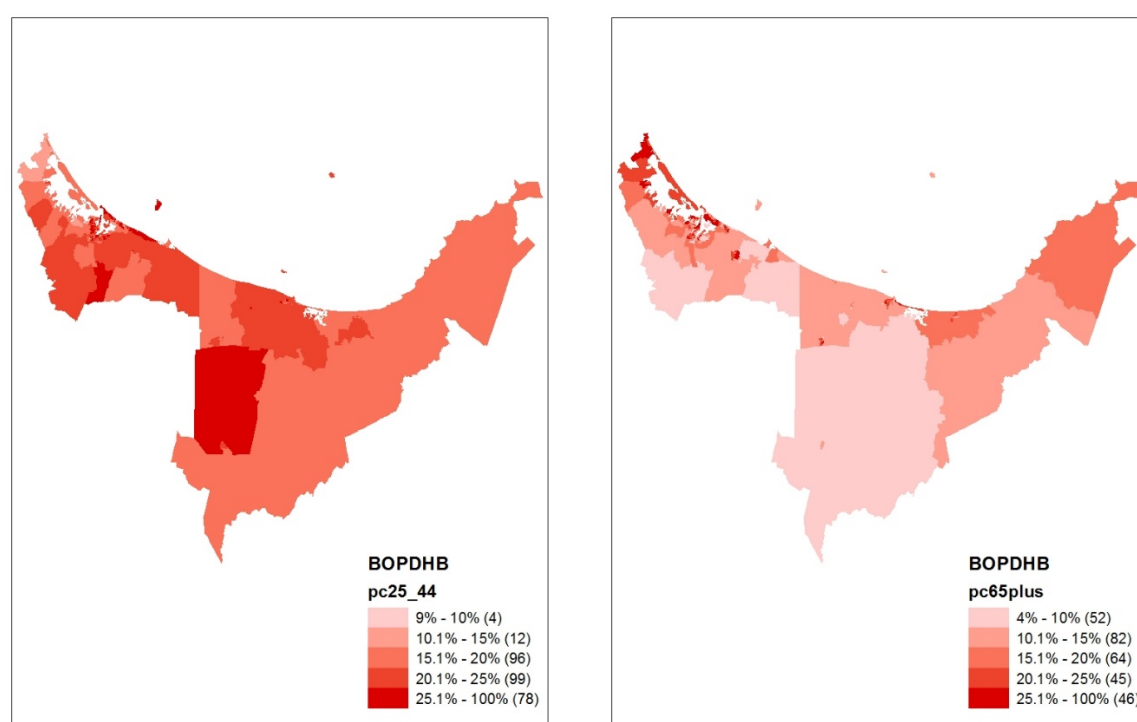
## Age profile of the Bay of Plenty DHB

According to the 2013 census, the BOPDHB had a total population of 205,994 people living in 289 data zones, with a mean of 713 people each (range: 492 to 1179).

Mean data zone proportions for five age groups in the BOPDHB					
Age group	0-14	15-24	25-44	45-64	65+
Bay of Plenty DHB	21.1%	11.4%	22.3%	26.6%	18.5%
New Zealand <sup>2</sup>	20.4%	13.8%	25.6%	25.8%	14.3%
Difference	0.7%	-2.4%	-3.3%	0.8%	4.2%

**Table 2. Mean data zone proportions for five age groups in the BOPDHB**

Table 2 shows that the age profile of the BOPDHB differs most from the national age profile in that it has 3.3% fewer people aged 25-44 and 4.2% more people aged 65+. Figure 6 shows the distribution of people in these two age groups.



**Figure 7. Distribution of people aged 25-44 and people aged 65+ in the BOPDHB**

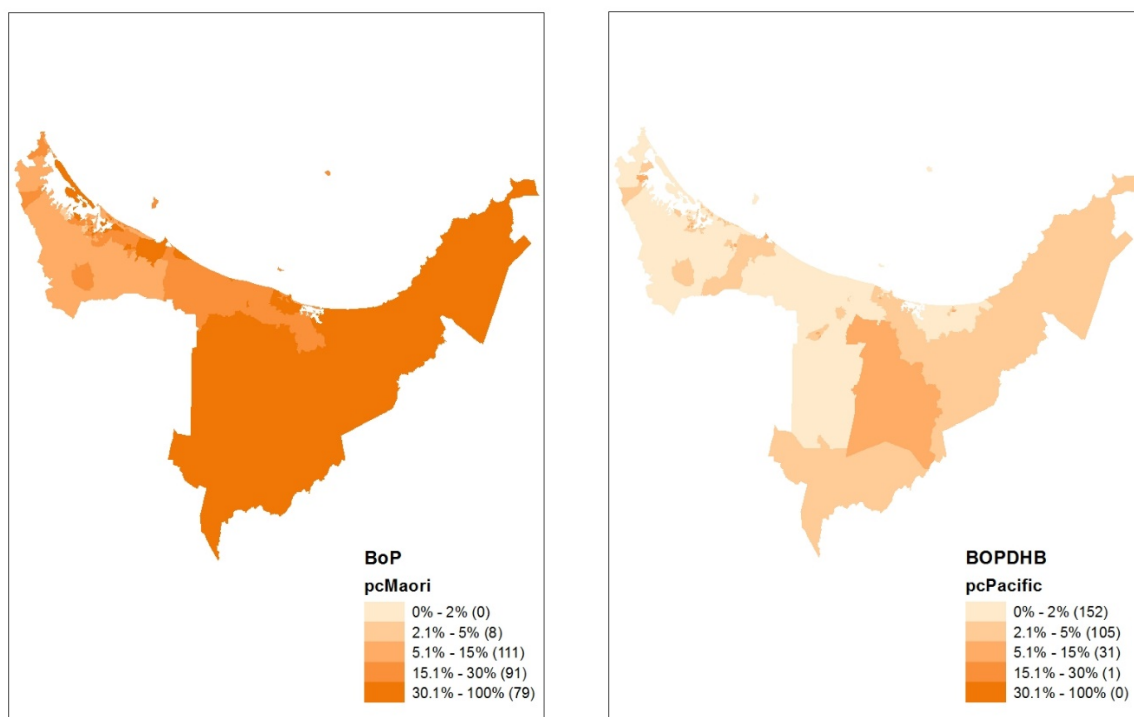
<sup>2</sup> Proportions for age groups and ethnicities at the national level are calculated using data zone counts to ensure fair comparison with DHB values, which also use data zone counts.

## Ethnicity profile of the Bay of Plenty DHB

This section uses the Total Response method to calculate proportions for each ethnicity from the 2013 census. Individuals who identify as more than one ethnicity are counted in more than one category. The proportion of Māori living in data zones within the BOPDHB ranged from 4% to 98%. The overall proportion of Māori was 25.3%, which was much higher than the national proportion of 15.3%. The proportion of Māori per data zone was greatest (>90%) in Murupara and the Ruatoki and Waimana Valleys. In total, 27.3% (79/289) of data zones in the BOPDHB have a Māori population of over 30%.

The proportion of Pacific ethnicity living in data zones within the BOPDHB ranged from 0% to 16.0%. The overall proportion of Pacific ethnicity was 2.4%, much lower than the national proportion of 7.3%. The proportion of Pacific ethnicity is greatest in the Tauranga suburb of Parkville (16.0%), followed by Te Puke (13.3%) and Gate Pa (12.4%).

The proportion of New Zealand European and Other ethnicities (NZEO) living in data zones within the BOPDHB ranged from 11.1% to 99.6%. The overall proportion of NZEO was 84.6%, which is slightly lower than the national proportion of 87.5%. The percentage of NZEO was lowest (<50%) in the eastern and southern parts of the DHB, as well as in Opotiki, Whakatane, Te Teko, Kawerau, Maketu and in the two Tauranga suburbs of Matua and Matapihi.



**Figure 8. Distribution of Māori and Pacific people in the BOPDHB**

For more information about the IMD, NZ data zones or this profile, please contact Dan Exeter at [d.exeter@auckland.ac.nz](mailto:d.exeter@auckland.ac.nz). For a downloadable spreadsheet of the IMD, online interactive maps, publications and technical documentation, please go to the [IMD website](#).