



Social contribution of the New Zealand red meat industry



Full Report

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Contents

Executive Summary.....	3
1.0 Introduction.....	4
2.0 Methodology.....	4
3.0 Social impact assessment.....	5
4.0 Social impact at the national level.....	16
4.1 Livestock production.....	21
4.2 Red meat processing.....	24
4.3 Red meat industry.....	26
4.4 Summary.....	29
5.0 Social impact at the community level.....	30
5.1 Regional Council areas.....	31
5.2 Territorial Authority areas.....	34
5.3 Summary.....	55
6.0 Social impact at the individual level.....	57
7.0 Conclusions.....	58

Executive Summary

The Meat Industry Association (MIA) in conjunction with Beef + Lamb New Zealand Ltd (B+LNZ) commissioned a social impact analysis of the red meat industry, including livestock production and red meat processing, examined individually and collectively. This report provides the results of that analysis.

The red meat industry makes a major social contribution to New Zealand. The social wellbeing it generates is reflected in the substantial adverse consequences that would occur should the industry not exist. This analysis identifies the social impacts flowing from cessation of the industry in both qualitative and quantitative terms, and at three levels – national, community and individual.

In terms of national impact, cessation of the red meat industry in aggregate could potentially result in a cut of almost \$12 billion in contribution to GDP, a doubling of the unemployment rate, and a fall in net New Zealand Government revenue (loss of personal and corporate taxation revenue plus increased expenditure on social welfare and health) of up to \$1.6 billion.

In terms of community impact, the analysis examined six Territorial Authorities (TAs). While the impacts varied widely, in only one TA was the social impact anticipated to be low for both cessation of livestock production, red meat processing and exports. At the other extreme, two TAs were estimated to experience unemployment levels to be in the order of 50 percent of the labour force or above, and personal income will fall by almost 30 percent. However, it should be noted that the community-wide impacts on unemployment rates are averages across the overall region. At the more localised level, these increases could be substantially higher, resulting in out-migration from smaller communities as they become unsustainable economically.

In terms of individual impact, loss of employment and income has marked adverse consequences on physical and psychological health. Farmers are also especially exposed to mental health issues and any negative impacts on the livestock production sector are likely to exacerbate the mental health outcomes amongst farm owners. It should also be noted that some of the geographical areas examined have a significantly above-average proportion of persons identifying as Māori, and some red meat processing facilities have high representation of Māori workers, so the detrimental impact of sectoral cessation on the Māori population will be concomitantly high.

In conclusion, any government policy measures that would significantly affect the red meat industry should consider the potential implications more broadly, given the very substantial contribution that the industry has on the broader wellbeing of the country, not only nationally but at the community and individual levels.

1.0 Introduction

SG Heilbron Economic & Policy Consulting (SGH or the Consultants) has previously prepared a report for the Meat Industry Association (MIA) examining the costs to operate and associated regulatory components in the red meat processing sector¹. Subsequently, the consultants were commissioned by MIA and Beef + Lamb New Zealand (B+LNZ) to prepare an economic impact assessment of the livestock production and red meat processing sectors separately as well as in aggregate representing the “red meat industry” in total². That analysis was undertaken for New Zealand as a whole, both islands separately and three regions, based on Regional Council areas.

During discussions as part of that project, MIA and B+LNZ indicated an interest in having a quantified social impact assessment undertaken addressing the potential impact of a cessation of output from either the production or processing sectors or both.

Accordingly, MIA in conjunction with B+LNZ commissioned the consultants to conduct a social impact assessment of the red meat industry, including production and processing, examined individually and collectively. This report provides the results of that analysis.

2.0 Methodology

The methodology to undertake the social impact assessment is summarised as follows:

- A preliminary workshop was conducted in Wellington with representatives of MIA and B+LNZ to review social impact categories to be included in the analysis, identify data sources and confirm geographical coverage.
- A literature review was undertaken addressing the key components of a social impact assessment from the perspective of each of:
 - The national economy;
 - The local community; and
 - The individual.

The literature review addressed these components internationally, with the specific objective of quantifying them, as far as possible, in the New Zealand context.

- At the national level, a quantified social impact assessment was prepared of the

¹ Meat Processing and Regulatory Costs – July 2019. SG Heilbron Economic & Policy Consulting

² Economic Impact of the Beef and Lamb Industries in New Zealand – January 2020. SG Heilbron Economic & Policy Consulting

closure of (a) the livestock production sector³, (b) the red meat processing sector⁴ and (c) both sectors, referred to as the red meat industry, (eliminating any double counting). This reflected the methodology used for the economic impact assessment. It drew on information derived from the literature review (including published statistics) and data from the economic impact assessment.

- At the local community level (i.e. Regional Council areas), a quantified social impact assessment was prepared of the closure of (a) the livestock production sector, (b) the red meat processing sector and (c) both sectors, referred to as the red meat industry, (eliminating any double counting). This again reflected the methodology used for the economic impact assessment.
- A quantified social impact assessment was then undertaken for six Territorial Authorities.
- At the individual level, the social impact was examined, primarily in qualitative terms.
- This report was prepared detailing the social impacts at the national and local levels of the cessation of the red meat sectors' operations in both qualitative and quantitative terms.

This report goes beyond the analysis of purely economic impacts attributable to the red meat industry in terms of gross product, employment and household income identified in the Economic Impact Report cited above to encompass the broader impacts on society both in quantitative and qualitative terms.

3.0 Social impact assessment

Social impact assessments may be defined as “... the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment”⁵.

International principles⁶ summarise social impact assessments as addressing one or more of the following:

³ Throughout this report, the livestock production sector refers to beef cattle and sheep farming.

⁴ Throughout this report, the red meat processing sector refers to the processing of cattle (both beef and dairy cattle) and sheep / lambs.

⁵ Frank Vanclay (2003) International Principles For Social Impact Assessment, Impact Assessment and Project Appraisal, 21:1, 5-12, DOI: 10.3152/147154603781766491 -

<https://www.tandfonline.com/doi/pdf/10.3152/147154603781766491>

⁶ ibid

- people's way of life –how they live, work, play and interact with one another on a day-to-day basis;
- their culture –their shared beliefs, customs, values and language or dialect;
- their community – its cohesion, stability, character, services and facilities;
- their political systems – the extent to which people are able to participate in decisions that affect their lives;
- their environment – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; and the adequacy of sanitation, their physical safety, and their access to and control over resources;
- their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity;
- their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties; and
- their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The social impact assessment presented in this report focusses on wellbeing in quantitative and qualitative terms, including:

- people's way of life, particularly in relation to work life;
- community, particularly its character, stability and services; and
- personal and property rights, particularly the effect on individual and community financial viability.

The focus of this social impact assessment is the closure of the livestock production sector, the red meat processing and exporting sector and the red meat industry (i.e. both sectors in aggregate) in New Zealand. Much of the international literature addressing social impacts of industry losses has concentrated on the manufacturing sector rather than agriculture and has been of a qualitative nature rather than being quantified. However, studies have been conducted in New Zealand which provide insight into the agriculture sector and the communities that it impacts. The literature review also incorporates an assessment of factors specific to New Zealand including the Māori population.

Manufacturing industry closure

Studies undertaken into the social impact of closures or downsizing in the Manufacturing sector, including food & beverage product manufacturing, have identified a range of consequences. These include:

- Closure of a specific facility in the manufacturing sector (rather than an industry-wide shutdown) will generally impact on specific localities and particular

occupations. This can result in “concentrated pools of workers with similar skills and experiences vying against each other for the relatively narrow range of jobs that suit their skills and experiences. This creates a long job queue that will take a long time to disperse”⁷.

- Older retrenched workers in particular may find the prospect of re-entering the job market after such a long time to be a daunting experience – they are unused to having to prepare resumes, undergo interviews and generally deal with the job application process⁸.
- Whilst those employed in the manufacturing sector will generally seek new employment in the same overall sector, technological change suggests that this might not be possible, or not with the same security of tenure. New jobs are more likely to be “mainly part-time, limited tenure and intermittent in nature”⁹.
- Internationally, differences have been noted by demographic characteristics regarding the success in finding alternative employment, particularly if it means relocating. Housing tenure has reportedly had an impact on this, with tenants more likely to find work and outright owners prone to depart the workforce. *Increasingly displaced workers face futures of less secure work in poorer quality jobs. In addition, redundancy and associated unemployment has an impact on mental and physical health, household income and the wellbeing of children*¹⁰.
- Research in Germany found that if commuting areas are self-contained, negative spillover effects of mass layoff are constrained to the local labour market with little negative effects on overall economy¹¹.
- Overall, mass redundancies in any sector, and particularly at the local level, give rise to¹²:
 - Increased long term unemployment;
 - Loss of individuals from the labour force; and
 - Reduced household and community income, translating into reduced expenditure, loss of service provision and loss of community and business confidence.

⁷ <http://theconversation.com/what-the-departure-of-toyota-holden-and-ford-really-means-for-workers-23137> Weller, S., Australian Research Council Future Fellow, Monash University 2014

⁸ *ibid*

⁹ Andrew Beer, Sally Weller, Tom Barnes, Ilke Onur, Julie Ratcliffe, David Bailey & Markku Sotarauta (2019) The urban and regional impacts of plant closures: new methods and perspectives, *Regional Studies, Regional Science*, 6:1, 380-394, June 2019

¹⁰ *ibid*

¹¹ Gathmann, Christina; Helm, Ines; Schönberg, Uta (2014) Spillover Effects in Local Labor Markets: Evidence from Mass Layoffs, *Beiträge zur Jahrestagung des Vereins für Socialpolitik*

¹² S Bidwell, S Colhoun, Canterbury District Health Board 2014. Health impact and the public health response to major job losses in small communities - An overview of the international and New Zealand literature

Studies have been undertaken specifically examining the closure of meat processing facilities in New Zealand^{13,14}. The analysis reflects the impact of closure of facilities in Hawke's Bay during the period from the early 1980s to the mid-1990s. Whilst workforce characteristics and the overall structure of the economy, including welfare provision, have changed markedly since then, some of the findings remain valid today, including:

- The impact of deteriorating physical and mental health, with older Māori males reportedly most susceptible to depression;
- Financial difficulties exacerbated by the fact that, in many cases, dual income households had both been employed at the facility. The sudden loss of a regular income resulted in their homes becoming a liability. There was also a noted reluctance to apply for unemployment benefits, through a sense of pride;
- Loss of camaraderie and kinship - camaraderie encompassed extended personal and social networks, and included the workers' pride in the reputation of working at the facility. The workforce became like an extended family outside of working hours.
- Training and education – the closure allowed many ex-workers to participate in further training and education. Whilst for some, this was the entrance to a “new life”, the abundance of ex-workers training for the same qualifications meant that there could be an excess of people with the same qualifications applying for a limited number of jobs. Upskilling was therefore no guarantee of a job.
- Relationships – families were severely stressed, with job loss, reduced social contact, lack of income and lack of confidence in finding other employment combining to produce tension in domestic relationships sometimes resulting in family break-up and divorce.

The implications of all of the above on issues associated with both community and individual health and wellbeing cannot be underestimated.

It should be noted that the growth of the services sector generally in most advanced economies, and in particular flexible employment arrangements associated with the so-called ‘gig’ economy, could suggest that workers made unemployed as a result of cessation of the red meat industry might more easily find alternative employment than has historically been the case. However, the following needs to be considered:

- Barriers to a seamless and rapid transition of employment do exist and can be substantial, notably when factors such as age, qualifications and training and the

¹³ *ibid*

¹⁴ Serious health events following involuntary job loss in New Zealand meat processing workers. *International Journal of Epidemiology*, January 2003

https://www.researchgate.net/publication/10938947_Serious_health_events_following_involuntary_job_loss_in_New_Zealand_meat_processing_workers

need for physical relocation required for new employment opportunities in the services sector (especially in high technology-based industries) are taken into account; and

- In relation to employment in the flexible ‘gig’ economy, there are significant adverse consequences associated with insecurity of employment tenure, low pay and unsocial hours worked.

Agriculture sector

A series of reports^{15,16,17,18,19} have been prepared examining various scenarios associated with the restoration of water quality within the Waikato River. The key objectives of the reports are to examine the various impacts of changes that impact on water quality so that it is safe for people to swim in and take food from over its entire length. A key input into the analysis is the integrated assessment, providing an assessment of the environmental, social, cultural and economic impacts of the water quality scenarios modelled. Whilst much of this analysis relates to environmental indicators and cultural indicators associated with Māori relationships with the river, they also examine social indicators associated with “vibrant and resilient” communities and economic indicators, measuring the impact of each scenario against the various indicators. A key point arising from the analysis is that any negative impacts tend to be ameliorated by a gradual transition and that many of the changes addressed will not happen overnight.

The impact of changes in the Agriculture sector in New Zealand has been addressed in a recent book entitled “Heartland Strong”²⁰. The following insights have been drawn from that publication.

- The average age of a farm owner has increased over the past 20 years from 56.5 to 58 years old. This has coincided with a decrease in the number of farms of approximately 23.5 percent between 2002 and 2016, although the farms that continue to exist tend to be larger. It should be noted that between the 2006 and 2013 Censuses, however, the average age of “farmers and farm managers” increased from 46.7 years to 47.9 years. This makes them slightly older than the total workforce employed as “Managers” (of which “farmers and farm managers” are a subset) where the average age increased from 44.1 to 45.8 years over the same period. Farmers and farm managers are also significantly older than the average person in the total workforce (41.2 years in 2006 and 43.2 years

¹⁵ Waikato Regional Council Technical Report 2018/38 – Baseline Report, March 2016

¹⁶ Waikato Regional Council Technical Report 2018/39 - Healthy Rivers project – comment on employment and vibrant resilient communities indicators, October 2015

¹⁷ Waikato Regional Council Technical Report 2018/40 - Integrated assessment one: Assessment of scenarios from modelling round one, March 2016

¹⁸ Waikato Regional Council Technical Report 2018/41 - Integrated assessment two: Achieving water quality for swimming, taking food and healthy biodiversity. Assessment of scenario 1 steps 10%, 25% and 50% from case 1 of modelling round two, March 2016

¹⁹ Waikato Regional Council Technical Report 2018/42 - Mātauranga Māori knowledge networks, July 2015

²⁰ Heartland Strong, 2019. Massey University Press

in 2013)²¹.

- Notwithstanding an apparent lower than average income and employment level²², the rural communities examined were proud of their communities and believed them to be resilient. The categories of resilience measured were as follows:
 - Social – social inclusion, networks, organisations, health, housing, leisure, education, families, skill base;
 - Cultural – records of cultural knowledge, maintenance of cultural identity, intergenerational practices;
 - Economic – productivity, profitability, employment, infrastructure, value chains;
 - Institutional – social norms, social licence, regulation, social inclusion, Māori institutions, identity;
 - Environmental – land resources, water, biosecurity, biodiversity, climate change; and
 - External – natural resource base, national government, international markets, wider society.
- The community attitudes to resilience indicated a more positive outlook than the analysis of statistics would suggest. (However, it should be noted that the community impacts addressed later in this report are probably more dramatic than anything considered in the analysis).

It has been suggested that amongst the Māori population, association with ancestral lands and heritage may impact on their willingness or desire to leave their immediate community. Closer ties with immediate and extended family than amongst the non-Māori population may also impact on this.

Health impacts of unemployment

It has long been recognised that the incidence of unemployment, and particularly involuntary unemployment, is closely linked with poorer physical health outcomes, greater incidences of mental health issues and even suicide at the worst extreme.

It has been reported that the mental health of the unemployed deteriorates the longer they are out of work and this is a barrier to securing future employment.

The connection between unemployment and mental illness was most visible during the global financial crisis in Australia when its economic growth slowed and unemployment and underemployment increased. Suicide rates among the unemployed rose 22 percent during the crisis compared to their rates prior to the crisis²³.

²¹ Statistics NZ – Census 2006 and 2013

²² Regional income and employment levels are addressed in Section 5.2 of this report.

²³ <https://theconversation.com/unemployed-and-at-risk-more-help-needed-for-those-out-of-work-52968>

Three predominant themes have been offered to explain the link between unemployment and poor health: poverty; psychological effects; and health related behaviours and lifestyle factors. Poverty reduces people's capacity to buy nutritious food, housing and health care. Unemployment can indirectly affect health because of reduced participation in society or from the stress of financial strain. There is less convincing evidence about the health impact of changes in life-style after losing work. 'It is generally agreed that health-related behaviour change, either as a confounding factor or as an intervening variable, does not account for the impact of unemployment on health'.²⁴

Of particular note is the impact of job or farm loss, or even the threat of it, on the mental health of farm owners. It has been noted that the relatively high rate of farmer suicide is a worldwide problem, exacerbated by a range of factors outside the individual's control including weather conditions, global market and financial trends, government regulation and disease. However, farm owners are also recognized as being more susceptible to stress due to isolation, long working hours and inter-generational farm ownership. It has also been acknowledged that farm owners, and rural workers in general, are less likely to seek assistance with mental health issues.²⁵ Any negative impacts on the livestock production sector are likely to exacerbate the mental health outcomes amongst farm owners.

Māori population

It is important to note that responses to changes in the availability of local employment may vary between Māori and non-Māori individuals. For this reason, it is worth a brief examination of some of the relevant characteristics of the Māori population compared with the overall population as described below. Where possible, the data has been drawn from the 2018 Census²⁶, although it should be noted that the full release of data from the Census will not be available until later in 2020. Therefore, much of the analysis relies on data from the 2013 Census.

At the 2018 Census, approximately 16.5 percent of the population identified as Māori – an increase from 15.6 percent in 2013. At the time of the 2013 Census, approximately 33.7 percent of the Māori population were aged less than 15 years compared with only 18.0 percent of non-Māori.

²⁴ www.phref.aph.gov.au_house_committee_ewr_owk_report_chapter2.pdf

²⁵ Farmers' mental health: A review of the literature – Alison Goffin, ACC Policy Team, 2014 - <https://www.acc.co.nz/assets/research/dcaf5b4eod/farmer-mental-health-review.pdf>

²⁶ <https://www.stats.govt.nz/2018-census/>

Analysis of socio-economic indicators prepared by the Ministry of Health²⁷ illustrates the disparities evident at the time of the 2013 Census as illustrated in Table 3.1. The data indicates that the Māori population overall is significantly more disadvantaged than the non-Māori population.

Table 3.1: Socio-economic indicators, Māori and non-Māori, 2013

Indicator	Māori total	Non-Māori total	Māori as % of Non-Māori
School completion (Level 2 Certificate or higher) aged 15+ years	45.1%	64.3%	70.1%
Unemployed, 15+ years,	10.4%	4.0%	260.0%
Total personal income less than \$10,000, 15+ years	24.1%	18.4%	131.0%
Receiving income support, 15+ years	30.4%	13.8%	220.3%
Living in rented accommodation, all age groups	49.5%	27.5%	180.0%
Household crowding ²⁸ , all age groups	18.6%	7.7%	241.6%

Statistics associated with health determinants, including mental health, illegal substance abuse and other crime, all indicate a poorer outcome for the Māori population. Some of these issues are summarised below:

- Life expectancy – in 2013, the average life expectancy at birth was 73.0 years for Māori males and 77.1 years for Māori females. By comparison, amongst the non-Māori population, the average life expectancy was 80.3 years for males and 83.9 years for females;
- The Māori population were significantly more likely to experience a range of health issues than the non-Māori population including:
 - Cardiovascular mortality – rate per 100,000 people aged 35+ years of 286.8 for Māori and 132.4 for non-Māori;
 - Cancer mortality - rate per 100,000 people aged 25+ years of 215.6 for Māori and 120.3 for non-Māori;
 - Mental health – high or very high probability of anxiety or depressive disorder as percentage of the population aged 15+ years – 9.4 percent for Māori and 6.0 percent for non-Māori;

²⁷ <https://www.health.govt.nz/our-work/populations/Māori-health/tatau-kahukura-Māori-health-statistics/nga-awe-o-te-hauora-socioeconomic-determinants-health/socioeconomic-indicators>

²⁸ The household crowding measure is based on the Canadian National Crowding Index. This calculates a required number of bedrooms for each household (based on the age, sex and number of people living in the dwelling), then compares it with the actual number of bedrooms. A household is considered crowded when there are fewer bedrooms than required.

- Intentional self-harm – hospitalisation rate per 100,000 people across all age groups – 103.0 for Māori and 86.6 for non-Māori; and
- Suicide mortality – rate per 100,000 people across all age groups – 16.9 for Māori and 9.1 for non-Māori. Young adults (aged between 15 and 24 years) had an above average suicide rate across the population as a whole but this was significantly more prevalent in the Māori population at 40.7 per 100,000 population compared with 15.6 per 100,000 for the non-Māori population.
- Prevalence in crime statistics – in 2018-19, approximately 42 percent of individuals charged with an offence in the justice system in New Zealand identified as Māori, whilst 44 percent of those convicted were Māori. In the same year, 46 percent of individuals charge with drug offences were Māori whilst 48 percent of those convicted were Māori. This represents a significantly higher proportion than those identifying as Māori in the total population (approximately 16.5 percent).

It is worth noting that in submissions to the Government Inquiry into Mental Health and Addiction²⁹, Māori leaders noted that “Māori identity is rooted in whakapapa (*line of descent from one’s ancestors*), tikanga (*customs and traditional values*) and kawa (*Māori protocol and etiquette*)”. Whilst that study was specifically related to mental health and wellbeing, it can also be more broadly associated with the response to loss of employment on a large scale and the resultant impact on the community. It has also been noted that sharing, volunteering and mutual support are viewed as central elements of Māori identity³⁰.

Specific out-migration impacts

Net out-migration from a region can have a detrimental impact on the provision of services locally, particularly in relation to education, health and other, predominantly population-based, services. The current characteristics of these across New Zealand are addressed below.

Education services

Out-migration from a region can result in a reduction in the number of individuals in school age groups. In New Zealand, primary and secondary school education is free for children between the ages of 5 and 19 years at all state schools and schooling is compulsory for children aged between 6 and 16 years³¹. In general, primary education starts at Year 1 and goes to Year 8 (around 5-12 years of age whilst secondary education goes from Year 9 to Year 13 (around 13-17 years of age).

²⁹ He Ara Oranga (Pathways to Wellness) - Government Inquiry into Mental Health and Addiction, November 2018 <https://mentalhealth.inquiry.govt.nz/inquiry-report/he-ara-oranga/>

³⁰ Heartland Strong, 2019. Massey University Press

³¹ <https://www.education.govt.nz/our-work/our-role-and-our-people/education-in-nz/#primary>

Data from the 2018 Census has been used in conjunction with information from the New Zealand Government³² to estimate the ratio of teachers per capita across the state school system in each Regional Council area in 2018. The data is based on total teacher head count, excluding day relief teachers and is illustrated in Table 3.2.

On average across New Zealand, the data would suggest there are approximately 0.07 teachers in the primary school sector per child aged between 5 and 12 years and approximately 0.09 teachers in the secondary school sector per child aged between 13 and 17 years. This, in turn, would indicate that for a reduction in the number of children of primary school age of approximately 15, one teacher would be lost from the sector. For the secondary school sector, one teacher would be lost for every reduction of approximately 12 children aged between 13 and 17 years.

Table 3.2: Teachers per capita by school age group, New Zealand, 2018

Regional Council	Teacher Head Count per capita		
	Primary	Secondary	Total
Northland Region	0.063	0.104	0.078
Auckland Region	0.068	0.075	0.071
Waikato Region	0.065	0.085	0.072
Bay of Plenty Region	0.065	0.094	0.076
Gisborne Region	0.066	0.119	0.085
Hawke's Bay Region	0.069	0.099	0.080
Taranaki Region	0.068	0.091	0.076
Manawatu-Wanganui Region	0.070	0.093	0.079
Wellington Region	0.070	0.080	0.074
Tasman Region	0.067	0.089	0.075
Nelson Region	0.070	0.107	0.084
Marlborough Region	0.071	0.080	0.074
West Coast Region	0.075	0.112	0.088
Canterbury Region	0.069	0.088	0.077
Otago Region	0.069	0.087	0.076
Southland Region	0.068	0.110	0.083
New Zealand	0.068	0.086	0.075

Source: SGH analysis of data from SNZ and educationcounts.gov.nz

Health services

Out-migration from a region can also result in a reduction in the number of people employed locally in the *Health care & social assistance* sector. Data from the 2018 Census has been used in conjunction with information from the Linked Employer Employee Data (LEED) to estimate the ratio of health care and social assistance workers per capita in each Regional Council area in 2018. The results are summarised in Table 3.3.

³² <https://www.educationcounts.gov.nz/statistics/schooling/workforce/teacher-workforce>

Overall, the data suggests that, across New Zealand, there is 1 person employed in hospitals for every 61 people in the total population, 1 person employed in medical and other health care services per 60 people in the population and 1 person employed in residential care & social assistance for every 54 people in the population.

Table 3.3: Health care workers per capita, New Zealand, 2018

Regional Council	Employment per capita in:			
	Hospitals	Medical and other health care services	Residential care services and social assistance	Total Health Care & Social Assistance
Northland Region	0.016	0.017	0.019	0.052
Auckland Region	0.016	0.015	0.016	0.048
Waikato Region	0.016	0.017	0.016	0.049
Bay of Plenty Region	0.013	0.019	0.018	0.051
Gisborne Region	0.019	0.015	0.021	0.055
Hawke's Bay Region	0.014	0.017	0.023	0.053
Taranaki Region	0.014	0.013	0.021	0.048
Manawatu-Wanganui Region	0.015	0.018	0.024	0.058
Wellington Region	0.017	0.019	0.020	0.056
Tasman / Nelson Region	0.017	0.019	0.017	0.053
Marlborough Region	0.009	0.014	0.020	0.043
West Coast Region	0.021	0.013	0.013	0.047
Canterbury Region	0.019	0.017	0.020	0.056
Otago Region	0.020	0.015	0.021	0.056
Southland Region	0.016	0.015	0.020	0.051
New Zealand	0.016	0.017	0.018	0.051

Other population-based services

The estimated employment per capita in other selected population-based service sectors normally supplied at the local level is illustrated in Table 3.4. It excludes, for example, some of the *Professional & technical services* sector which, whilst being population-based in general, may be more likely to be located in larger urban centres.

Amongst the selected sub-sectors, labour intensity per capita is highest in food & beverage services, with 1 person employed in that sector for every 34 people in the population. Other retailing, including clothing, household goods and department stores, is the next most labour-intensive sector per capita, with 1 person employed in that sector for every 37 people in the population.

Table 3.4: Other population-based services per capita, New Zealand, 2018

Regional Council	Employment per capita in:						
	Construction services	Motor vehicle & motor vehicle parts retailing	Fuel retailing	Food retailing	Other retailing	Food and beverage services	Sport and recreation services
Northland Region	0.017	0.003	0.003	0.014	0.019	0.019	0.004
Auckland Region	0.023	0.004	0.002	0.014	0.031	0.034	0.006
Waikato Region	0.022	0.005	0.002	0.015	0.023	0.025	0.007
Bay of Plenty Region	0.022	0.004	0.002	0.015	0.025	0.025	0.007
Gisborne Region	0.015	0.004	0.002	0.014	0.019	0.020	0.005
Hawke's Bay Region	0.019	0.004	0.002	0.016	0.022	0.024	0.006
Taranaki Region	0.022	0.005	0.002	0.015	0.023	0.023	0.006
Manawatu-Wanganui Region	0.017	0.005	0.003	0.014	0.023	0.023	0.006
Wellington Region	0.021	0.003	0.001	0.015	0.025	0.032	0.006
Tasman / Nelson Region	0.019	0.005	0.002	0.020	0.031	0.029	0.007
Marlborough Region	0.019	0.004	0.002	0.020	0.026	0.027	0.004
West Coast Region	0.017	0.004	0.005	0.020	0.023	0.032	0.007
Canterbury Region	0.031	0.005	0.002	0.018	0.029	0.029	0.007
Otago Region	0.024	0.004	0.002	0.021	0.028	0.039	0.011
Southland Region	0.022	0.005	0.003	0.020	0.028	0.026	0.006
New Zealand	0.023	0.004	0.002	0.016	0.027	0.030	0.007

4.0 Social impact at the national level

At a national level, closure or downsizing of an industry sector can have detrimental impacts on the following:

- Value of Gross Domestic Product;
- Employment and unemployment levels;
- Reduction in taxation revenue from both personal and company tax revenue;
- Welfare payments associated with unemployment;
- Health care costs; and
- Balance of trade.

In assessing the potential impact on the New Zealand economy of the cessation of either livestock production or red meat processing, the following data sources have been utilised.

*Unemployment rate*³³

In the year ending June 2018, the unemployment rate, measured as a percentage of those unemployed in the labour force aged between 15 and 64 years was 4.7% for New Zealand as a whole. This does not include persons not in the labour force for whatever reason.

On average, during 2017-18, approximately 2.41 million people aged between 15 and 64 years were employed whilst approximately 119,000 persons were unemployed.

*Personal income tax rates*³⁴

Personal income tax in New Zealand is calculated on a progressive scale depending on the level of income received as follows for 2017-18:

Income	Tax rate
\$0 - \$14,000	10.5%
\$14,001 - \$48,000	17.5%
\$48,001 - \$70,000	30.0%
\$70,001 and above	33.0%

*Company tax*³⁵

The majority of companies in New Zealand pay a flat rate of 28% in company tax on profits earned. Exceptions to this are Māori authorities which pay a flat rate of 17.5% and trusts and trustees which pay a rate of 33% on any income the trust earns.

*Welfare payments*³⁶

New Zealand provides a range of welfare payments which may be accessed by unemployed individuals including Jobseeker Support (unemployment benefits), Accommodation Supplement, Family Tax Credit and Community Services Card.

These payments are subject to income and assets (cash and non-cash) means test. They are also affected by the age of the applicant, family composition (number of dependents) and current housing costs.

Examples of the range of payments that may be available depending upon the applicant's circumstances are provided below³⁷.

³³ Statistics New Zealand

³⁴ <https://www.ird.govt.nz/income-tax/income-tax-for-individuals/tax-codes-and-tax-rates-for-individuals/tax-rates-for-individuals>

³⁵ <https://www.ird.govt.nz/income-tax/income-tax-for-businesses-and-organisations/tax-rates-for-businesses>

³⁶ <https://www.workandincome.govt.nz/online-services/eligibility/index.html>

³⁷ <https://check.msd.govt.nz/services>

Applicant characteristics				
Age - 18	Age - 30	Age - 50	Age - 55	Age - 67
Single – no dependents	Employed partner earning \$500 per week	Non-working partner, 2 dependent children	Employed partner earning \$300 per week, 3 dependent children	Single – no dependents
Rental accommodation paying \$50 per week	Mortgage – payments of \$250 per week	Rental accommodation paying \$175 per week	Own home outright (no mortgage)	Own home outright (no mortgage)
Income - \$100 per week Cash assets - \$1,000 Non-cash assets - \$500	Income - \$0 Cash assets - \$10,000 Non-cash assets - \$20,000	Income - \$0 Cash assets - \$5,000 Non-cash assets - \$1,500	Income - \$150 Cash assets - \$20,000 Non-cash assets - \$50,000	Income - \$0 Cash assets - \$50,000 Non-cash assets - \$200,000
Eligibility for payments (per week)				
Jobseeker Support – between \$163 and \$173	Jobseeker Support – up to \$76	Jobseeker Support – between \$191 and \$391	Jobseeker Support – up to \$137	New Zealand Superannuation – between \$380 and \$411
Accommodation Supplement - No	Accommodation Supplement – up to \$105	Accommodation Supplement - \$35	Accommodation Supplement - No	Accommodation Supplement - No
Family tax Credit - No	Family tax Credit - No	Family Tax Credit - \$204	Family Tax Credit - \$296	Family tax Credit - No
Community Services Card - Yes	Community Services Card - Yes	Community Services Card - Yes	Community Services Card - Yes	Community Services Card - Yes
Estimated total - \$168	Estimated total - \$181	Estimated total - \$530	Estimated total - \$433	Estimated total - \$396

Source: New Zealand Ministry of Social Development

Health care costs

It is well recognised that the psychological and financial stress associated with loss of employment can result in serious mental health issues which can in many cases be exacerbated by alcohol and drug use. In the most extreme cases, these issues can result in suicide. This has been addressed in more detail in Section 3 of this report.

A report published by the Government Inquiry into Mental Health and Addiction³⁸ indicates that in any given year “around one in five people will experience mental health and addiction challenges” and that the prevalence appears to be increasing. However, not all these individuals utilise mental health and addiction services either through choice or lack of access.

In 2016-17, a total of \$1.4 billion was dedicated to mental health and addiction services³⁹ including funding for cross agency initiatives. In the same year, 176,310 people accessed specialist mental health and addiction services, representing approximately 3.6 percent of the population.

The 2019 Budget incorporated a \$455 million programme over five years to provide a frontline service for mental health, aimed at providing access for 325,000 people by 2023-24⁴⁰. Clearly, a considerable proportion of that funding is devoted to training and upskilling mental health workers and providing physical facilities and equipment rather than the direct costs of individual contact services. It has been conservatively estimated that the average cost per contact visit is approximately \$150.

In estimating the proportion of the newly unemployed who will access mental health services, it should be noted that there are no readily available statistics on the prevalence of psychological disorders resulting from unemployment that require some form of medical intervention. However, acknowledging the estimated 20 percent of people experiencing mental health challenges and 3.6 percent of the population utilising specialist mental health and addiction services, it has been assumed that approximately 20 percent of those rendered unemployed will seek access to mental health services, either through specialist services or their local general practitioner.

Government revenue and expenditure⁴¹

Overall, the impacts of a severe downturn in an industry sector can serve to reduce the New Zealand Government revenue while at the same time increasing demand for the services for which it pays. The key areas affected are addressed below.

³⁸ He Ara Oranga (Pathways to Wellness) - Government Inquiry into Mental Health and Addiction, November 2018 <https://mentalhealth.inquiry.govt.nz/inquiry-report/he-ara-oranga/>

³⁹ Office of the Director of Mental Health and Addiction Services Annual Report 2017 (published February 2019) <https://www.health.govt.nz/publication/office-director-mental-health-and-addiction-services-annual-report-2017>

⁴⁰ <https://www.budget.govt.nz/budget/2019/wellbeing/mental-health/new-frontline-service.htm>

⁴¹ <https://treasury.govt.nz/sites/default/files/2019-10/fsgnz-2019.pdf>

Revenue

In the year ending June 2018, total sovereign revenue in New Zealand was \$84.8 billion. Much of this is derived from sources that would be impacted, either directly or indirectly, by the closure of significant industry sectors. These include:

- Individual income tax revenue – approximately \$36.0 billion or 42.4 percent of total revenue. Any significant and extended increases in unemployment would have a detrimental impact on this source of income.
- Corporate tax revenue – approximately \$13.5 billion or 15.9 percent of total revenue. Business closures or significant reductions in profit levels would result in a reduction in corporate tax revenue.
- Goods and services tax – approximately \$20.8 billion (net) or 24.5 percent of total sovereign revenue. A reduction in household expenditure resulting from job losses and reduced income levels would impact on revenue derived from goods and services tax.
- Other indirect taxation, including excise and duties associated with petroleum, tobacco, road users and alcohol – approximately \$7.0 billion or 8.3 percent of total. This revenue source could also be negatively affected by reduced household spending, particularly that associated with discretionary expenditure.

Expenditure

In the year ending June 2018, Core Crown expenses were approximately \$80.6 billion. These comprised the following:

Category	Value (\$ million)	Percent of total
Social security and welfare	25,999	32.3%
Health	17,159	21.3%
Education	13,629	16.9%
Core government services	4,670	5.8%
Law and order	4,184	5.2%
Other Core Crown expenses	14,935	18.5%
Total Core Crown expenses	80,576	100.0%

A significant increase in unemployment as a result of industry closure or extensive downsizing would be expected to increase demand for Government services, particularly those associated with social security & welfare and health. The former would be impacted by increased demand for unemployment benefits (Jobseeker Support) and other welfare payments that may be applicable depending on individual circumstances. Demand for public and emergency housing may also increase. Pressure on health service providers would also be expected to rise, particularly in relation to mental health issues but also associated with more general concerns relating to general health and wellbeing.

There may also be an increase in expenditure on law & order services. It has been suggested that there may be some correlation between unemployment and financially motivated crime such as burglary, theft and fraud⁴². Conversely, a study conducted for the New Zealand Ministry of Justice⁴³ found that persons who were unemployed were more likely to be victims of crime than the average person in New Zealand (33% compared with 24%) as were those experiencing financial hardship (31%). It has also been noted⁴⁴ that unemployment and the associated psychological stress can result in increased illegal drug use. A combination of the above factors could serve to increase the demands on law & order service provision.

4.1 Livestock production

This section addresses the potential national impacts of the cessation of *livestock production* in New Zealand.

4.1.1 Impact on Gross Domestic Product

Cessation of the entire *livestock production* sector in New Zealand would impact the country's Gross Domestic Product (GDP) by approximately -\$6 billion or approximately 2.2 percent of the national economy when flow-on effects on upstream industries are included. The upstream industries impacted include *Financial & insurance services*, *Agricultural support services*, *Basic material wholesaling* and *Fertiliser & pesticide manufacturing*. The direct impact would be a reduction of approximately \$2.1 billion.

Clearly, if *livestock production* was removed from the economy, it could be expected to be replaced to a lesser or greater extent by other economic activities. Depending on the characteristics of the replacement activities the net impact on GDP could be lower than the estimates outlined above, although the timeframe for this would be dependent on the type of alternative activities. Suitability of land type and topography will also impact on the economic viability of alternatives.

It should also be noted that cessation of *livestock production* would effectively wipe out the downstream *red meat processing* sector unless provision is made for the importation of live animals which is unlikely to occur for a variety of reasons including animal health & welfare and economic viability.

⁴² Xu, Shuhan - A New Zealand study of association between crime and the state of the economy, 2017. <https://researcharchive.vuw.ac.nz/xmlui/handle/10063/6568>

⁴³ <https://www.justice.govt.nz/justice-sector-policy/research-data/nzcass/survey-results/who-experiences-crime/>

⁴⁴ How economic recessions and unemployment affect illegal drug use: A systematic realist literature review. *International Journal of Drug Policy*, Vol. 44, June 2017

4.1.2 Impact on employment levels

Data derived for the *Economic Impact of the Beef and Lamb Industries* estimated that the *livestock production* sector directly supported approximately 16,000 FTE jobs. However, the definition of an FTE job includes those working both part-time and full-time and therefore does not directly correlate with published data on employment or unemployment which refers to individuals. Based on estimates of the distribution of workforce status utilised in the *Economic Impact Assessment*⁴⁵, it is estimated that a total of approximately 19,900 individuals are employed in the *livestock production* sector. Transferring these individuals from the employed category to the unemployed category would serve to increase the national unemployment rate from the 2017-18 level of 4.7 percent to a new rate of 5.5 percent, at least in the short term.

The Economic Impact assessment also estimated flow-on employment impacts of approximately 27,700 FTE jobs. Converting these to individuals by sector suggests that the flow-on impacts of cessation of the *livestock production* sector could be a loss of approximately 40,000 jobs, at least in the short term. The loss of these flow-on jobs would increase the unemployment rate from the 2017-18 level of 4.7 percent to 6.3 percent.

When taken in aggregate, cessation of the *livestock production* sector could result in national unemployment increasing from its 2017-18 level of 4.7 percent to almost 7.1 percent.

4.1.3 Impact on personal income tax revenue

The impact on the government's revenue personal income tax is impacted by the number of individuals no longer receiving income from the affected employment, the magnitude of income lost and the duration of unemployment or loss of income.

Data from the Household Labour Force Survey published by SNZ indicates that in 2017-18, the average duration of unemployment in New Zealand was approximately 21.3 weeks⁴⁶. That data is not provided by age group. However, data from selected OECD countries⁴⁷ indicates that the average duration of unemployment amongst persons aged 55 years and above is between 1.4 and 1.7 times greater than for the total population defined as being unemployed. Data from the 2013 Census in New Zealand indicates that the average age of people employed across all industries was approximately 42.9 years whilst for those employed in *Agriculture, forestry & fishing* the average age was 45.3 years. In addition, approximately 12.6 percent of those employed in *Agriculture, forestry & fishing* were aged 65 and above compared with 6.5 percent in the total workforce.

⁴⁵ Economic Impact of the Beef and Lamb Industries in New Zealand – January 2020. SG Heilbron Economic & Policy Consulting – Appendix 1 – Employment numbers

⁴⁶ Estimates prepared by the Consultant based on Statistics NZ – Household Labour Force Survey

⁴⁷ https://stats.oecd.org/Index.aspx?DataSetCode=AVD_DUR#

These factors in combination would suggest that individuals in the beef and sheep production sector could experience a longer than average period of unemployment if the sector ceased to exist.

After adjusting for age and increased duration of unemployment associated with older age groups, it is estimated that the average duration of unemployment in *Agriculture, forestry & fishing* would be approximately 24.1 weeks and this has been used as a proxy for the cattle and sheep production sector.

In estimating the impact on personal income tax revenue, the mean income per individual employed in the relevant industry sectors has been used in the absence of data on the distribution of income across all employees by sector. The average time period for this loss of personal income tax revenue has been assumed to be 21.3 weeks for flow-on employment and 24.1 weeks for those directly employed in the cattle and sheep production sector. The relevant published income tax rate has been applied to the calculated mean income by sector.

Based on these assumptions, the loss in personal income tax revenue, reflecting a mix of final and provisional tax, would be approximately \$186 million or 0.5 percent of the current revenue.

4.1.4 Impact on corporate tax revenue

Estimating the impact on government revenue from corporate tax is a complex exercise for both the *livestock production* sector directly and the other industry sectors indirectly supported by *livestock production*. It requires information relating to the structure of corporate entities, their assets and liabilities, level of deductions such as depreciation and a range of other factors. Consequently, it has been excluded from this analysis. However, it should be recognised that there would be a negative impact, which could be significant.

4.1.5 Impact on social security and welfare costs

Estimates of the impact on social security and welfare costs have incorporated the following assumptions:

- Individuals aged 65 years and above will exit the labour force and transition to receipt of New Zealand Superannuation payments, at an average of \$396 per week. This will be ongoing and not impacted by the duration of unemployment.
- The balance of those made unemployed by the cessation of the livestock production sector and its associated flow-on impacts will receive welfare payments for the projected duration of their unemployment based on the following⁴⁸:
 - 10 percent receiving \$168 per week;

⁴⁸ Estimates prepared by the Consultants, based on Statistics NZ data

- 30 percent receiving \$181 per week;
- 30 percent receiving \$530 per week; and
- 30 percent receiving \$433 per week.

Based on the above assumptions, cessation of the livestock production sector would result in an increase in social security and welfare costs of approximately \$203 million associated with direct job losses and a further \$340 million associated with flow-on job losses in the year in which they occur. In total, this equates to approximately 2.1 percent of the Government's expenditure on social security and welfare in 2017-18.

4.1.6 Impact on health care costs

It is difficult to assess the potential impact on health care costs, particularly in the *livestock production* sector. As noted earlier, farmers are already particularly susceptible to stress-related health issues but are less likely to seek medical intervention. Cessation of the *livestock production* sector would be expected to exacerbate the proportion with mental health issues, including the impact on partners and other family members. Whilst these costs have not been quantified, they could be significant across the country.

4.2 Red meat processing

This section addresses the potential national impacts of the cessation of the red meat processing and exporting sector in New Zealand.

4.2.1 Impact on Gross Domestic Product

Cessation of the entire red meat processing and exporting sector in New Zealand would reduce the country's Gross Domestic Product (GDP) by approximately -\$11 billion or approximately 3.9 percent of the national economy when flow-on effects on upstream industries are included. The upstream industries impacted include *Beef & sheep farming*, *Other agriculture (particularly dairy cattle farming)*, *Agricultural support services*, *Financial & insurance services*, *Public administration and defence* and *Road transport*. The direct impact would be a reduction of approximately \$1.6 billion.

It should be noted that cessation of red meat processing and exporting across New Zealand would effectively eliminate the major portion of the livestock production sector. Locally, sheep production may still be undertaken to provide wool for domestic use and export but the meat value would be lost apart from local demand supplied by individuals able to undertake the necessary kill and preparation. Data from B+LNZ⁴⁹ indicates that revenue derived from wool sales makes up approximately 13 percent of the combined wool and prime lamb or mutton sales, suggesting that the loss of sales to the red meat processing sector could make wool production alone unviable. Beef cattle would only be sought by local butchers prepared to slaughter and dress their own meat and, overall, the price of both locally produced beef and sheep meat to domestic consumers in New

⁴⁹ B+LNZ Sheep and Beef Farm Surveys

Zealand might rise dramatically. Whilst this could theoretically be replaced by imported product, this is likely to impact on cost, quality, disease risk and customer satisfaction.

4.2.2 Impact on employment levels

Data derived for the *Economic Impact of the Beef and Lamb Industries* estimated that the red meat processing and exporting sector directly supported approximately 19,700 FTE jobs. Based on estimates of the distribution of workforce status utilised in the *Economic Impact Assessment*, it is estimated that a total of approximately 26,700 individuals are employed in the *red meat processing* sector. Transferring these individuals from the employed category to the unemployed category would increase the national unemployment rate from the 2017-18 level of 4.7 percent to 5.8 percent, at least in the short term.

The *Economic Impact Assessment* also estimated flow-on employment impacts of approximately 66,700 FTE jobs. Converting these to individuals by sector suggests that the flow-on impacts of cessation of the *red meat processing* sector could be a loss of approximately 93,000 jobs, at least in the short term. The loss of these flow-on jobs would increase the unemployment rate from the 2017-18 level of 4.7 percent to 8.4 percent.

When taken in aggregate, cessation of the red meat processing and exporting sector could result in national unemployment increasing from its 2017-18 level to almost 9.4 percent.

4.2.3 Impact on personal income tax revenue

The impact on the government's revenue from personal income tax is impacted by the number of individuals no longer receiving income from the affected employment, the magnitude of income lost and the duration of unemployment or loss of income.

Discussions with selected red meat processors would suggest that employees in the red meat processing sector are marginally younger than the average at approximately 38.9 years compared with 42.9 for the workforce as a whole. While this might indicate a relatively shorter duration of unemployment than average, it should be noted that the majority of employees in the sector would be classified under the occupational category of Labourers with potentially similar skill sets to each other. As the majority of *red meat processing* facilities are located outside major metropolitan areas, an influx of individuals with similar skills could be expected to experience difficulties in finding alternative employment, at least in the short term. This is addressed further in Section 5 of this report. It has therefore been assumed that the average duration of unemployment for those individuals losing their job in the red meat processing sector would be similar to the average for the labour force as a whole i.e. 21.3 weeks.

In estimating the impact on personal income tax revenue, the mean income per individual employed in the relevant industry sectors has been used in the absence of data

on the distribution of income across all employees by sector. The average time period for this loss of personal income tax revenue has been assumed to be 21.3 weeks for the direct employees and flow-on employment with the exception of those employed in the cattle and sheep production sector where an average of 24.1 weeks has been assumed. The relevant published income tax rate has been applied to the calculated mean income by sector.

Based on these assumptions, the loss in personal income tax revenue resulting from closure of the red meat processing and exporting sector would be approximately \$369 million or 1.0 percent of the current revenue.

4.2.4 Impact on corporate tax revenue

Estimating the impact on corporate tax revenue is a complex exercise for both the red meat processing and exporting sector directly and the other industry sectors indirectly supported by it. It requires information relating to the structure of corporate entities, their assets and liabilities, level of deductions such as depreciation and a range of other factors. Consequently, it has been excluded from this analysis. However, it should be recognised that there would be a negative impact, which could be significant.

4.2.5 Impact on social security and welfare costs

Estimates of the impact on social security and welfare costs have incorporated the assumptions outlined above for *livestock production*. Based on these assumptions, cessation of the *red meat processing* sector would result in an increase in social security and welfare costs of approximately \$227 million associated with direct job losses and a further \$821 million associated with flow-on job losses. In total, this equates to approximately 4.0 percent of the Government's expenditure on social security and welfare in 2017-18.

4.2.6 Impact on health care costs

Assessing the impact on health care costs is a complex matter, likely to be affected by the geographical location and availability of associated community support networks, prevalence of individuals and their families seeking medical intervention, particularly for issues associated with mental health impacts and affordability. However, whilst not quantified, these costs could be significant.

4.3 Red meat industry

This section addresses the potential national impacts of the cessation of the red meat industry, defined as an aggregate of livestock production, red meat processing and exporting, in New Zealand. It should be noted that this analysis is not a sum of the individual results for livestock production, red meat processing and exporting as that would incorporate significant double-counting, in relation to flow-on impacts. The data used in this analysis is based on aggregating the two sectors in the input output table to

create a “red meat industry sector”. The direct impacts of each sector are additive e.g. the direct employment numbers for each of livestock production and red meat processing have been derived from either B+LNZ data or private data provided by processors, with the latter scaled up to reflect total kill numbers.

Flow-on impacts, however, reflect the impacts associated with purchases made by the sector, purchases made by suppliers to the sector and expenditure by employees of the sector (and the subsequent upstream employees of suppliers). If these results were simply aggregated, it would result in significant double-counting and an overestimation of the economic impact. For example, the flow-on impacts associated with livestock purchases by the red meat processing and exporting sector support or underpin a large proportion of the employment in the upstream livestock production sector. However, these employment impacts have already been captured in the direct employment numbers for *livestock production*.

4.3.1 Impact on Gross Domestic Product

Cessation of the entire *red meat industry* in New Zealand would reduce the country’s Gross Domestic Product (GDP) by approximately -\$12 billion or approximately 4.2 percent of the national economy when flow-on effects on upstream industries are included. The upstream industries impacted include *Other agriculture (particularly dairy cattle farming), Agricultural support services, Financial & insurance services, Public administration and defence, Road transport and Health care & social assistance*. The direct impact would be a reduction of approximately \$3.8 billion.

4.3.2 Impact on employment levels

Data derived for the *Economic Impact of the Beef and Lamb Industries* estimated that the *red meat industry* directly supported approximately 35,700 FTE jobs. Based on estimates of the distribution of workforce status utilised in the *Economic Impact Assessment*, it is estimated that a total of approximately 46,600 individuals are employed in the *red meat industry*. Transferring these individuals from the employed category to the unemployed category would serve to increase the national unemployment rate from the 2017-18 level of 4.7 percent to 6.5 percent, at least in the short term.

The *Economic Impact Assessment* also estimated flow-on employment impacts of approximately 56,700 FTE jobs. Converting these to individuals by sector suggests that the flow-on impacts of cessation of the *red meat industry* could be a loss of approximately 81,400 jobs, at least in the short term. The loss of these flow-on jobs would increase the unemployment rate from the 2017-18 level of 4.7 percent to 7.9 percent.

When taken in aggregate, cessation of the *red meat industry* is estimated to result in national unemployment increasing from its 2017-18 level to almost 9.8 percent.

4.3.3 Impact on personal income tax revenue

The impact on the government's revenue from personal income tax is impacted by the number of individuals no longer receiving income from the affected employment, the magnitude of income lost and the duration of unemployment or loss of income.

As outlined in the individual analyses for the livestock production and red meat processing sectors, it has been assumed that the average duration of unemployment reflects the national average of 21.3 weeks for all sectors with the exception of those directly employed in the livestock production sector where an average of 24.1 weeks has been assumed.

In estimating the impact on personal income tax revenue, the mean income per individual employed in the relevant industry sectors has been used in the absence of data on the distribution of income across all employees by sector. The relevant published income tax rate has been applied to the calculated mean income by sector.

Based on these assumptions, the loss in personal income tax revenue resulting from closure of the red meat processing and exporting sector would be approximately \$397 million or 1.1 percent of the current revenue.

4.3.4 Impact on corporate tax revenue

Estimating the impact on corporate tax revenue is a complex exercise for both the *red meat industry* directly and the other industry sectors indirectly supported by it. It requires information relating to the structure of corporate entities, their assets and liabilities, level of deductions such as depreciation and a range of other factors. Consequently, it has been excluded from this analysis. However, it should be recognised that there would be a negative impact as a result of business closures and reduction in profit levels, which could be significant.

4.3.5 Impact on social security and welfare costs

Estimates of the impact on social security and welfare costs have incorporated the assumptions outlined above for livestock production. Based on these assumptions, total cessation of the *red meat industry* would result in an increase in social security and welfare costs of approximately \$430 million associated with direct job losses and a further \$729 million associated with flow-on job losses. In total, this equates to approximately 4.5 percent of the Government's expenditure on social security and welfare in 2017-18.

4.3.6 Impact on health care costs

As noted previously, increases in health care costs associated with cessation of the *livestock production* sector and the *red meat processing* sector have not been quantified as these would be affected by a range of factors. However, as noted in the literature review in Section 3.0 of this report, the detrimental impacts on health, and particularly

mental health, associated with unemployment are well-recognised. The magnitude of unemployment resulting from cessation of the *red meat industry* could have a significant impact on health care costs.

4.4 Summary

The overall national impact from cessation of the *livestock production* sector and the *red meat processing and exporting* sector are summarised below in Table 4.1, along with the results for the *red meat industry* in aggregate.

Overall, we estimate that closure of the *red meat industry* and its component parts could impact New Zealand by at almost -\$1.56 billion in terms of net outgoings (i.e. reduction in revenue and increase in expenditure). This is a conservative assessment in that it excludes the effects of reduced corporate tax revenue, reduced revenue derived from taxes predominantly associated with household expenditure, such as GST, and increased health care costs. Cessation of the total *red meat industry* would also reduce New Zealand's GDP by almost \$12 billion.

Table 4.1: Summary of national impacts 2017-18

Metric	Livestock production	Red meat processing	Red meat industry
GDP (\$ million)			
Direct	-2,129	-1,645	-3,776
Indirect	-4,130	-9,457	-8,197
Total	-6,259	-11,103	-11,973
Total as % of national total	-2.2%	-3.9%	-4.2%
Unemployment rate			
Direct	5.5%	5.8%	6.5%
Indirect	6.3%	8.4%	7.9%
Total	7.1%	9.4%	9.8%
Total as % of national total	150.3%	200.6%	207.6%
Personal income tax revenue (\$ million)			
Direct	-28.1	-81.2	-109.3
Indirect	-157.9	-287.6	-288.1
Total	-186.0	-368.8	-397.4
Total as % of national total	-0.5%	-1.0%	-1.1%
Social security & welfare costs (\$ million)			
Direct	202.9	227.3	430.2
Indirect	340.4	821.2	729.4
Total	543.3	1,048.5	1,159.6
Total as % of national total	2.1%	4.0%	4.5%
Total as % of national total	0.0%	0.0%	0.0%
Impact on national accounts (\$ million)			
Direct	231.0	308.6	539.5
Indirect	498.3	1,108.8	1,017.5
Total	729.3	1,417.3	1,557.0

5.0 Social impact at the community level

The impact on the local community will vary depending upon the significance of the relevant industry locally, the proportion of the workforce employed in it and the extent of inter-industry linkages. However, policy makers should be careful not to understate the effect on community wellbeing.

Key impacts on the community, excluding impacts on unemployment rates, include:

Education and health services – Out-migration of some sectors of the population, seeking employment elsewhere, can lead to a subsequent reduction in government funding provided to education and health services. This can particularly affect the education sector if families with school-age children choose or need to leave the local area.

Similarly, should there be a significant outflow of residents, health services may be reduced when the population base reaches a level whereby it cannot sustain a variety of health professionals. A loss of General Practitioners, dental professionals and nursing staff are the most likely outcome in regional and rural communities which may not have direct access to other specialised health professionals. However, the impact of these losses, perhaps necessitating the residents to travel some distance to access services, can in turn increase levels of out-migration. Schools may lose teaching staff and health services may be cut. This issue may be exacerbated if the sectors have historically provided funding for these services.

House prices – Should the closure of *livestock production* or *red meat processing* facilities be accompanied by individuals or families leaving the community and selling their homes, this can have the effect of lowering house prices to the extent whereby the realizable sales price does not cover the equity. This can impact not only on the individual directly impacted by the job loss, but also the wider community.

Other services – Loss of direct expenditure by the sectors in the local region, combined with reduced spending by the previous employees as a result of loss of income, can result in other sectors of the economy becoming unsustainable. *Retail trade* and *Accommodation & food services* facilities in particular are likely to be impacted by reduced personal expenditure.

Community organisations - A loss of population, combined with potential may reduce the number of volunteers within the community, placing pressure on local organisations including volunteer emergency services, of particular significance in rural and regional communities. This issue may be exacerbated if the sectors previously sponsored these groups.

The assessment of the potential social impact at the community level initially analyses the impact at the level of two regions assessed in the economic analysis, namely the combined Regional Council areas of Taranaki & Manawatu-Wanganui and Otago & Southland. These areas have been assessed in a similar format to the national impact.

Subsequently, the potential social impact on much smaller communities has been assessed for six Territorial Authorities. That analysis focusses more on the demographic characteristics of the geographical area including the potential for out-migration and impact on the local demand for workers in the service sectors, particularly education and health.

5.1 Regional Council areas

Whilst the impacts on both the *livestock production* and *red meat processing* sectors are expected to be inter-linked at the Regional Council area level, these linkages are less pronounced than at the national level. The analysis already incorporates the current proportion of expenditure on livestock made by red meat processors that is sourced from outside the region. However, cessation of *livestock production* locally could result in the red meat processing and exporting sector within the region purchasing an increased proportion of livestock from elsewhere. Similarly, should the *red meat processing* sector cease operations across the region, livestock producers could be expected to sell their output outside the immediate geographical area.

5.1.1 Taranaki and Manawatu-Wanganui Regional Councils in aggregate

Adopting the same assumptions as utilised in the assessment of the national impact, described in Section 4 of this report, would have the potential to impact on the combined Regional Council areas of Taranaki and Manawatu-Wanganui as indicated in Table 5.1.

Overall, it is estimated that closure of the *livestock production* sector would reduce the gross regional product (GRP) of the area by \$835 million or 4.4 percent of the current level when flow-on effects are taken into account. A similar analysis for the red meat processing and exporting sector indicates a reduction in GRP of approximately \$1.5 billion or 7.9 percent of the 2017-18 level whilst for the *red meat industry* in aggregate, the impact would be approximately \$1.8 billion representing a decrease of 9.5 percent.

Table 5.1: Summary of impacts on combined Regional Council areas of Taranaki and Manawatu-Wanganui

Metric	Livestock production	Red meat processing	Red meat industry
Gross Regional Product (\$ million)			
Direct	-236	-262	-498
Indirect	-599	-1,231	-1,300
Total	-835	-1,493	-1,798
<i>Total as % of regional total</i>	<i>-4.4%</i>	<i>-7.9%</i>	<i>-9.5%</i>
Unemployment rate			
Direct	7.1%	9.0%	10.3%
Indirect	8.8%	11.9%	12.2%
Total	10.1%	15.1%	16.7%
<i>Total as % of regional total</i>	<i>172.9%</i>	<i>258.1%</i>	<i>284.6%</i>
Personal income tax revenue (\$ million)			
Direct	-3.7	-13.5	-17.2
Indirect	-18.0	-31.2	-35.6
Total	-21.7	-44.7	-52.9
<i>Total as % of national total</i>	<i>-0.1%</i>	<i>-0.1%</i>	<i>-0.1%</i>
Social security & welfare costs (\$ million)			
Direct	24.8	51.7	76.5
Indirect	48.9	104.4	108.2
Total	73.7	156.2	184.7
<i>Total as % of national total</i>	<i>0.3%</i>	<i>0.6%</i>	<i>0.7%</i>

In 2017-18, the unemployment level in the region was approximately 5.9 percent⁵⁰. Closure of either the *livestock production* sector or the red meat processing and exporting sector would have a significant impact on the average level of unemployment across the combined Regional Council areas. The impact from the *livestock production* sector would be to increase the average unemployment rate to 10.1 percent whilst the impact from the red meat processing and exporting sector would potentially result in the unemployment rate increasing to 15.1 percent. The impact of cessation of the *red meat industry* could result in an unemployment rate of 16.7 percent.

However, it should be noted that these rates are averages across the overall region. At the more localised level, these increases could be substantially higher, resulting in out-migration from smaller communities as they become unsustainable economically. That does not necessarily translate into out-migration from the overall region however and could be reflected by population shifts within the region.

Overall, the impact on personal income tax revenue resulting from closure of the *livestock production*, red meat processing and exporting sectors is estimated to be

⁵⁰ Statistics NZ

approximately -\$21.7 million and -\$44.7 million respectively. The impact for the *red meat industry* in aggregate is estimated at approximately -\$52.9 million.

Additional government welfare payments are estimated to be approximately \$73.7 million for the *livestock production* sector and \$156.2 million for the *red meat processing* sector. The impact for the *red meat industry* in aggregate is estimated at approximately \$184.7 million.

5.1.2 Otago and Southland Regional Councils in aggregate

Adopting the same assumptions as utilised in the assessment of the national impact, described in Section 4 of this report, would have the potential to impact on the combined Regional Council areas of Otago and Southland as indicated in Table 5.2.

Overall, it is estimated that closure of the *livestock production* sector would reduce the gross regional product (GRP) of the area by \$1.3 billion or 7.1 percent of the current level when flow-on effects are taken into account. A similar analysis for the *red meat processing and exporting* sector indicates a reduction in GRP of approximately \$1.75 billion or 9.5 percent of the 2017-18 level whilst for the *red meat industry* in aggregate, the impact would be approximately \$2.2 billion representing a decrease of 11.8 percent.

Table 5.2: Summary of impacts on combined Regional Council areas of Otago and Southland

<i>Metric</i>	Livestock production	Red meat processing	Red meat industry
Gross Regional Product (\$ million)			
Direct	-484	-363	-847
Indirect	-824	-1,390	-1,330
Total	-1,308	-1,752	-2,176
Total as % of regional total	-7.1%	-9.5%	-11.8%
Unemployment rate			
Direct	6.1%	7.2%	9.3%
Indirect	9.1%	11.6%	11.8%
Total	11.2%	14.8%	17.1%
Total as % of regional total	280.6%	371.8%	428.6%
Personal income tax revenue (\$ million)			
Direct	-2.6	-19.7	-22.2
Indirect	-26.4	-33.9	-43.3
Total	-29.0	-53.6	-65.5
Total as % of national total	-0.1%	-0.1%	-0.2%
Social security & welfare costs (\$ million)			
Direct	40.5	51.7	92.2
Indirect	82.3	132.4	132.1
Total	122.8	184.2	224.3
Total as % of national total	0.5%	0.7%	0.9%

In 2017-18, the unemployment level in the region was approximately 4.0 percent⁵¹. Closure of either the *livestock production* sector or the red meat processing and exporting sector would have a significant impact on the average level of unemployment across the combined Regional Council areas. The impact from the *livestock production* sector would be to increase the average unemployment rate to 11.2 percent whilst the impact from the red meat processing and exporting sector would potentially result in the unemployment rate increasing to 14.8 percent. The impact from the *red meat industry* in aggregate is estimated to be an unemployment rate of 17.1 percent.

However, it should be noted that these rates are averages across the overall region. At the more localised level, these increases could be substantially higher, resulting in out-migration from smaller communities as they become unsustainable economically. That does not necessarily translate into out-migration from the overall region however and could be reflected by population shifts within the region.

Overall, the impact on personal income tax revenue resulting from closure of the *livestock production* and the red meat processing and exporting sectors is estimated to be approximately -\$29.0 million and -\$53.6 million respectively. The impact for the *red meat industry* in aggregate is estimated at approximately -\$65.5 million.

Additional government welfare payments are estimated to be approximately \$122.8 million for the *livestock production* sector and \$184.2 million for the *red meat processing* sector. The impact for the *red meat industry* in aggregate is estimated at approximately \$224.3 million.

5.2 Territorial Authority areas

The preceding analysis summarised the potential impact of cessation of *livestock production* and red meat processing and exporting, both individually and in aggregate, for two of the regions examined in the *Economic Impact Assessment* for the beef and lamb industry. Whilst that analysis can be undertaken with the benefit of the input output tables previously constructed, particularly in relation to measuring flow-on impacts, the two regions (both of which are an aggregation of two Regional Council areas) encompass a large geographical area which include significant urban centres and have a sizeable workforce. The social impact, when measured at that level, may be less profound than at the small area level.

Accordingly, estimates have been prepared for six Territorial Authorities (TAs) which are home to at least one red meat processing and exporting facility and generally have a relatively high proportion of employment in *Agriculture, forestry & fishing*. Relevant data

⁵¹ Statistics NZ

for these TAs has been drawn from the 2018 Census in order to provide an estimate of the potential social impact at more localised level. It is however important to note that input output tables have not been constructed for any TA and accordingly any reference to potential flow-on impacts should be treated with caution. This is addressed further in the following discussion.

The characteristics of each TA in terms of age structure, labour force status, employment distribution and personal income is provided in Table 5.3. It should be noted that the TAs have not been identified by name to preclude identifying individual *red meat processing* facilities. It should also be noted that the employment estimates have been converted from FTE to number of individuals and that for *livestock production*, these numbers have been estimated based on the proportion of the relevant Regional Council area.

It should also be noted that analysis at this geographical level has less of an inter-linked impact between the two component sectors of the *red meat industry*. The cessation of *livestock production* in a TA would not necessarily impact on the local red meat processing and exporting facility as it is likely to be already purchasing livestock from outside the immediate area. Similarly, the closure of an individual red meat processing and exporting facility might be expected to have an impact on local *livestock production* that would be mitigated to some extent as they could supply their livestock to *red meat processing* facilities elsewhere. However, there would be costs associated with this, either for producers, processors or both, and this may affect the viability of such supply.

Table 5.3: Demographic characteristics of selected Territorial Authorities, 2018

Territorial Authority	A	B	C	D	E	F	New Zealand
Age of resident population							
0-4 years	6.6%	7.6%	7.3%	6.0%	6.1%	5.4%	6.3%
5-9 years	7.6%	8.4%	8.1%	7.0%	6.6%	5.8%	6.9%
10-14 years	7.5%	7.5%	7.2%	6.2%	6.6%	5.6%	6.5%
15-24 years	10.6%	12.1%	11.1%	10.9%	11.0%	9.5%	13.2%
25-39 years	16.0%	15.7%	18.1%	15.9%	16.5%	19.0%	20.4%
40-54 years	19.3%	16.9%	19.5%	20.6%	21.3%	21.0%	19.6%
55-64 years	14.3%	14.7%	13.0%	15.1%	14.3%	15.9%	12.0%
65 years and over	18.3%	17.1%	15.7%	18.3%	17.5%	17.8%	15.2%
Median age (years)	41.8	38.6	38.5	43.9	42.6	44.4	37.4
Age Dependency Ratio	0.66	0.68	0.62	0.60	0.58	0.53	0.54
Ethnic group of resident population							
European	84.5%	47.5%	80.6%	92.2%	88.8%	86.5%	70.2%
Māori	24.6%	65.7%	27.6%	10.2%	12.4%	14.4%	16.5%
Pacific Peoples	1.9%	3.3%	2.2%	1.3%	1.9%	2.0%	8.1%
Asian	2.7%	2.2%	3.4%	2.9%	3.6%	5.2%	15.1%
Other Ethnicity	1.4%	1.1%	1.8%	2.0%	1.9%	3.0%	2.7%
Labour Force Status of population aged 15+							
Employed Full time	45.9%	41.9%	48.8%	49.1%	52.9%	55.3%	50.1%
Employed Part time	16.3%	14.8%	14.3%	15.4%	15.7%	15.8%	14.7%
Unemployed	4.0%	7.2%	4.4%	3.5%	2.8%	2.1%	4.0%
Labour Force Participation	66.3%	63.9%	67.5%	68.0%	71.3%	73.2%	68.7%
Unemployment Rate	6.1%	11.2%	6.5%	5.1%	3.9%	2.9%	5.8%

Territorial Authority	A	B	C	D	E	F	New Zealand
Status in employment							
Paid employee	74.2%	82.1%	76.6%	83.0%	74.9%	77.7%	82.7%
Employer	7.9%	5.3%	8.9%	5.2%	8.7%	7.8%	5.6%
Self-employed and without employees	13.3%	9.1%	11.0%	10.1%	11.8%	11.7%	10.2%
Unpaid family worker	4.6%	3.6%	3.6%	1.7%	4.6%	2.8%	1.5%
Occupation by Place of Work							
Managers	28.7%	18.1%	28.6%	16.1%	27.4%	24.2%	18.0%
Professionals	11.8%	14.5%	11.6%	17.6%	10.5%	12.8%	23.0%
Technicians and Trades Workers	10.5%	10.1%	11.1%	12.5%	9.9%	11.8%	12.1%
Community and Personal Service Workers	7.4%	8.8%	6.0%	9.6%	8.1%	11.9%	9.5%
Clerical and Administrative Workers	8.5%	8.2%	7.9%	10.5%	7.0%	7.9%	10.9%
Sales Workers	7.1%	5.6%	5.6%	8.6%	5.4%	7.3%	9.2%
Machinery Operators and Drivers	7.0%	5.2%	7.3%	9.0%	7.3%	7.5%	6.0%
Labourers	19.1%	29.6%	22.0%	16.1%	24.4%	16.7%	11.3%
Industry by Place of Work							
Agriculture Forestry and Fishing	31.6%	24.1%	25.8%	7.6%	33.8%	13.3%	5.9%
Mining	0.3%	0.1%	0.8%	1.9%	0.4%	1.9%	0.2%
Manufacturing	11.5%	18.5%	24.9%	11.0%	15.9%	14.1%	9.8%
Electricity Gas Water and Waste Services	0.9%	0.6%	0.8%	0.7%	0.4%	0.3%	0.7%
Construction	5.1%	6.8%	6.3%	9.7%	6.8%	8.3%	9.2%
Wholesale Trade	4.2%	1.2%	2.6%	2.2%	1.4%	1.9%	4.9%
Retail Trade	8.6%	6.6%	6.2%	10.4%	6.6%	7.8%	9.0%
Food Services	4.2%	4.7%	3.2%	8.5%	4.2%	18.1%	6.5%
Transport Postal and Warehousing	2.7%	1.9%	2.4%	5.5%	3.5%	3.7%	4.3%
Information Media and Telecommunications	0.3%	0.6%	0.4%	1.1%	0.3%	0.5%	1.6%
Financial and Insurance Services	0.9%	0.5%	0.8%	1.3%	0.4%	0.5%	2.7%
Rental Hiring and Real Estate Services	1.4%	1.2%	1.3%	1.4%	0.9%	1.9%	2.0%
Professional Scientific and Technical Services	4.1%	5.0%	4.1%	4.6%	4.0%	3.2%	9.9%
Administrative and Support Services	1.8%	1.8%	1.8%	4.5%	1.3%	4.3%	4.6%
Public Administration and Safety	3.2%	4.2%	2.9%	4.9%	4.4%	2.9%	5.4%
Education and Training	7.2%	10.6%	6.3%	6.9%	6.0%	4.8%	8.1%
Health Care and Social Assistance	7.8%	6.8%	5.6%	12.4%	6.1%	5.3%	9.5%
Arts and Recreation Services	1.0%	1.3%	0.8%	1.5%	0.5%	4.2%	1.8%
Other Services	3.4%	3.1%	2.9%	4.0%	2.9%	3.1%	3.9%
Net workforce flow by industry							
Agriculture Forestry and Fishing	93.4%	83.5%	96.5%	93.2%	94.8%	93.7%	100.0%
Mining	66.7%	50.0%	121.4%	81.6%	78.6%	90.3%	100.0%
Manufacturing	71.2%	78.2%	105.2%	86.1%	91.3%	92.0%	100.0%
Electricity Gas Water and Waste Services	87.5%	85.7%	117.2%	93.8%	76.5%	62.5%	100.0%
Construction	75.6%	79.8%	89.5%	90.4%	86.5%	81.2%	100.0%
Wholesale Trade	74.6%	66.7%	87.8%	87.0%	69.5%	79.4%	100.0%
Retail Trade	83.7%	89.0%	82.4%	94.1%	86.2%	86.9%	100.0%
Food Services	77.1%	83.6%	78.1%	87.9%	84.1%	90.1%	100.0%
Transport Postal and Warehousing	68.1%	76.0%	89.3%	89.3%	81.1%	79.4%	100.0%
Information Media and Telecommunications	85.7%	100.0%	88.9%	104.3%	75.0%	87.5%	100.0%
Financial and Insurance Services	75.0%	71.4%	89.7%	93.3%	66.7%	63.6%	100.0%
Rental Hiring and Real Estate Services	85.0%	80.0%	93.3%	90.6%	89.7%	90.3%	100.0%
Professional Scientific and Technical Services	81.5%	81.7%	87.8%	97.0%	95.0%	83.6%	100.0%
Administrative and Support Services	65.6%	60.0%	64.9%	87.3%	70.9%	86.1%	100.0%
Public Administration and Safety	71.3%	85.4%	83.0%	101.0%	107.6%	79.6%	100.0%
Education and Training	87.7%	80.8%	90.1%	98.0%	86.2%	80.5%	100.0%
Health Care and Social Assistance	74.3%	79.8%	83.8%	98.5%	79.8%	63.6%	100.0%
Arts and Recreation Services	88.9%	86.7%	84.2%	88.9%	68.2%	89.7%	100.0%

Territorial Authority	A	B	C	D	E	F	New Zealand
Other Services	83.5%	93.9%	89.6%	96.6%	81.6%	84.9%	100.0%
Total	81.5%	81.6%	92.7%	92.4%	89.1%	85.5%	100.0%
Mean personal income per annum	\$33,653	\$29,962	\$36,337	\$35,721	\$36,730	\$36,874	\$38,816
Source of personal income (all sources)							
No source of income during that time	5.2%	4.8%	6.0%	5.5%	4.5%	4.1%	6.3%
Wages, salary, commissions, bonuses etc	52.8%	54.6%	54.6%	59.1%	59.2%	61.4%	60.6%
Self-employment or own business	19.3%	12.7%	17.4%	13.8%	20.5%	19.7%	14.8%
Interest, dividends, rent, other investments	15.0%	9.0%	13.4%	12.5%	16.6%	14.5%	16.8%
Regular payments from ACC or a private work accident insurer	2.2%	2.0%	2.0%	2.2%	2.3%	2.3%	1.6%
New Zealand Superannuation or Veteran's Pension	22.6%	20.9%	19.2%	21.3%	20.4%	20.0%	17.3%
Other superannuation, pensions, or annuities	1.9%	2.1%	1.7%	2.2%	1.6%	2.1%	2.4%
Jobseeker Support	8.6%	16.7%	8.6%	6.6%	6.5%	4.7%	6.2%
Sole Parent Support	1.9%	3.0%	1.8%	1.8%	1.4%	1.0%	1.6%
Supported Living Payment	2.7%	1.9%	2.2%	2.6%	1.2%	1.3%	1.8%
Student Allowance	1.1%	1.4%	1.1%	1.0%	0.9%	0.7%	2.3%
Other government benefits, government income support payments, war pensions or paid parental leave	4.8%	5.7%	4.5%	3.4%	3.5%	3.4%	3.8%
Other sources of income, including support payments from people who do not live in my household	1.1%	1.1%	1.1%	1.1%	1.0%	1.5%	1.5%

Source: SGH analysis of SNZ data from 2018 Census

In assessing the potential social impact of cessation of the *livestock production* or red meat processing and exporting sector, the characteristics of each TA have been taken into consideration. When examining flow-on impacts from the direct loss of jobs in either sector, the flow-on to *livestock production* from red meat processing and exporting has been excluded. Flow-on impacts have been based on the lower of either the relevant Island or Regional Councils within that Island. However, at the local level, these may overstate the estimated flow-on which should be treated as indicative only.

The following assumptions apply to all TAs examined:

- The immediate impact on the unemployment rate reflects transferring the direct jobs lost in either sector from the employed to unemployed category;
- No allowance has been made for temporary migrants employed in the workforce, although the proportion is relatively low, being approximately 5 percent in *red meat processing*⁵²;
- Estimates of personal income lost to the community has assumed that the average income for each sector reflects the median income in the TA, adjusted to reflect the relevant ratio of mean income in either livestock production or red meat processing to the overall mean income nationally; and
- Scenarios examining the impact of out-migration have assumed that this will only apply to individuals aged between 15 and 64 years and their dependents.

⁵² MIA Draft Workforce Plan, 2020

Social Impact on Territorial Authority A

They key characteristics of TA **A** when compared with New Zealand as a whole are:

- An older population on average with a median age of 41.8 years (compared with 37.4 years for New Zealand) and almost one-third of the population aged 55 years and above (compared with 27.2 percent on average nationally). The TA also has a higher than average proportion of children aged 14 years or below, giving it a significantly higher age dependency ratio⁵³ at 0.66 than New Zealand as a whole (0.54);
- Almost one quarter of the population indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 66.3 percent, slightly lower than the national average (68.7 percent) and probably, at least in part, influenced by the age structure of the population. The unemployment rate in the reference period was 6.1 percent compared with 5.8 percent for New Zealand in the same period.
- The TA had a lower proportion of individuals in paid employment, with a higher proportion of those identifying as an employer, self-employed or an unpaid family worker. This is likely to be at least in part influenced by the significantly above average level of employment in *Agriculture, forestry & fishing* as described below;
- Occupations described as managers or labourers were both significantly over-represented in the TA when assessed by place of work. Almost 32 percent of those working in the TA were employed in *Agriculture, forestry & fishing* which is likely to impact on the distribution of occupations, bearing in mind that farm managers are classified as “managers”. The TA also had an above average proportion of people employed in the *Manufacturing* sector;
- Overall, across all industry sectors, there was a net outflow from the TA for employment purposes.
- Individuals living in the TA had a mean personal income of \$33,650, approximately 13 percent lower than the national average.
- A higher proportion of residents of the TA received income from self-employment, superannuation and Jobseeker Support than the national average. A concomitant reduction in those receiving wages and salaries from an employer was observed.

Whilst the TA had an unemployment level that is slightly higher than the New Zealand average, the difference is not significant. However, the age dependency ratio is significantly higher than the national average meaning there is potentially more

⁵³ The age dependency ratio measures the proportion of the population aged 0-14 years and 65 years and above as a proportion of those typically in the labour force i.e. aged between 15 and 64 years.

“pressure” on those in the traditional working age groups (15-64 years) to support the younger and older age cohorts.

Overall, should either the *livestock production* or *red meat processing* sector cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	13.1%	8.3%
As percentage of current rate	214.7%	137.0%
Total employment impact	23.2%	13.2%
As percentage of current rate	382.1%	216.5%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 13.1 percent if the closure happened overnight. The extent of these impacts would be contingent on the extent to which employment in *livestock production* can be replaced by alternative economic activities. It could be expected that the majority of land currently utilised for *livestock production* would be utilised for other activities related to the overall *Agriculture & forestry* industry. Dependent on the type of replacement activities, some of the employment lost from *livestock production* might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, notwithstanding these replacement activities, it is likely that a proportion of those currently employed in the *livestock production* sector would decide to leave the TA to seek alternative employment opportunities elsewhere.

Closure of the *red meat processing* facility would have a lower impact on the unemployment rate in the TA. The impact of direct job losses would increase the unemployment rate to 8.3 percent whilst the total impact, including flow-on effects, would potentially increase the unemployment rate to 13.2 percent. The concentration of people with similar skill levels leaving the workforce as a result of cessation of red meat processing and exporting might result in increased difficulty in finding alternative employment and thus extend the period of time spent in unemployment. However, the impact is unlikely to be significant enough to result in high levels of out-migration from the TA. There is already a net outflow of residents from the region to work elsewhere, particularly those employed in *Manufacturing*.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact

(i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$11.4m	-\$8.3m
As percentage of current income	-2.4%	-1.8%
Total impact	-\$16.7m	-\$17.8m
As percentage of current income	-5.9%	-5.5%

The decrease in overall personal income levels would be unlikely to cause a major shift in household expenditure patterns locally. In the short term, it may impact on discretionary household spending, reducing expenditure in restaurants and entertainment facilities, for example.

- Impact of out-migration – as noted above, the impact of increased levels of unemployment in this TA would be unlikely to result in significant levels of out-migration amongst those employed in the red meat processing and exporting sector. However, this may not apply to those in the *livestock production* sector, where the impact on unemployment levels is more substantial. This may be mitigated to some extent by the high proportion of Māori people in the overall population and workforce. As noted in Section 3, many people identifying as Māori have a closer affiliation with the cultural and social attributes of their local communities than non-Māori people. The above average age of the population in the TA, combined with the fact that individuals employed in *Agriculture, forestry & fishing* are generally older than average, may also reduce the likelihood of out-migration. Nevertheless, those in younger age groups may not be willing or financially capable of waiting until alternative land-based (or other) jobs become available.
- As an example of the impact of out-migration on the teaching and health care workforce, two scenarios have been examined. The first assumes that 25 percent of those becoming unemployed in the *livestock production* sector move out of the region accompanied by school age children, whilst the second assumes a 50 percent out-migration level. It should be noted that the figures below only address out-migration from those directly impacted by closure of the sector and do not incorporate the flow-on effects.

Livestock production

25% out-migration

Primary school teachers	6
Secondary school teachers	4
Health care workers	9

50% out-migration

Primary school teachers	11
Secondary school teachers	8
Health care workers	18

Social Impact on Territorial Authority B

They key characteristics of TA **B** when compared with New Zealand as a whole are:

- A slightly older population on average with a median age of 38.6 years (compared with 37.4 years for New Zealand). Approximately 32 percent of the population were aged 55 years and above (compared with 27.2 percent on average nationally). However, the TA also has a higher than average proportion of children aged 14 years or below (23.5 percent compared with the national average of 19.6 percent), giving it a significantly higher age dependency ratio at 0.68 than New Zealand as a whole (0.54);
- Almost two thirds of the population indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 63.9 percent, lower than the national average (68.7 percent) and probably, at least in part, influenced by the age structure of the population. The unemployment rate in the reference period was 11.2 percent, almost twice that recorded for New Zealand in the same period (5.8 percent).
- The TA had a similar proportion of individuals in paid employment to the country as a whole, but a higher proportion of those identifying as an unpaid family worker;
- Occupations described as labourers were significantly over-represented in the TA when assessed by place of work. Almost 30 percent of those working in the TA were employed as “labourers”. Employment in the TA in *Agriculture, forestry & fishing* was significantly higher than average (24.1 percent compared with 5.9 percent across New Zealand) whilst employment in *Manufacturing* was almost twice that for the country as a whole;
- Overall, across all industry sectors, there was a net outflow from the TA for employment purposes.
- Individuals living in the TA had a mean personal income of \$29,960, approximately 23 percent lower than the national average.
- Given the high level of unemployment it is not surprising that the TA had a significantly higher than average proportion of residents receiving Jobseeker

Support. There was also a higher proportion of residents of the TA receiving income from superannuation. An associated reduction in those receiving wages and salaries from an employer was observed.

The significantly above-average unemployment rate indicates that any loss of employment from cessation of either the livestock production or red meat processing and exporting sectors would have a major impact on this TA. In addition, the current age dependency ratio would suggest that job losses in the age group of 15-64 years would have a major impact on local productivity and GRP.

Overall, should either the *livestock production* or *red meat processing* sector cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	19.6%	23.5%
As percentage of current rate	174.5%	208.9%
Total employment impact	31.8%	49.7%
As percentage of current rate	283.2%	442.5%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 19.6 percent if the closure happened overnight. The extent of these impacts would be contingent on the extent to which employment in *livestock production* can be replaced by alternative economic activities. It could be expected that the majority of land currently utilised for *livestock production* would be utilised for other activities related to the overall *Agriculture & forestry* industry. Depending on the type of replacement activities, some of the employment lost from *livestock production* might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, given the already high unemployment levels, cessation of the *livestock production* sector might be expected to result in younger workers in particular in the sector choosing to relocate to seek employment elsewhere, without waiting to see if alternate employment might become available locally.

Closure of the *red meat processing* facility would have an even greater impact on the unemployment rate. With regard to direct jobs lost, this could increase the unemployment rate to 23.5 percent, more than twice the current rate, which in turn is already almost twice the national average. The majority of people employed in *red meat processing* facilities are classified as labourers, with skill sets associated with boning, packing etc. The ability of these individuals to find

alternative employment locally is likely to be minimal, given the high underlying unemployment rate, and the lack of capacity amongst local businesses to provide new jobs.

Whilst it has been noted that the impact of flow-on effects should be treated with caution, closure of the *red meat processing* facility could result in almost half the current labour force becoming unemployed.

Should unemployment rates reach the levels noted above, the duration of unemployment is likely to be extended considerably beyond the average periods noted for New Zealand as a whole. This can have significant detrimental impacts in terms of sense of self-worth for individuals and can not only result in an increase in the long term unemployed, but can also cause individuals to exit the labour force altogether.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact (i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$5.3m	-\$17.6m
As percentage of current income	-2.8%	-9.2%
Total impact	-\$7.8m	-\$37.7m
As percentage of current income	-6.8%	-28.8%

The decrease in overall personal income levels, particularly resulting from closure of the *red meat processing* facility, could be expected to cause a major shift in household expenditure patterns locally. This would be expected to impact on discretionary expenditure such as restaurants, entertainment and recreation. However, the magnitude of the impact could also affect the ability amongst some households to make rental or mortgage payments. The flow-on effects from this could result in a fall in housing values (both owner-occupied and rental properties).

- Impact of out-migration – the impact of out-migration resulting from the significant increases in unemployment could be expected to be substantial. However, this may be mitigated by the high proportion of Māori people in the overall population and workforce. As noted in Section 3, many people identifying as Māori have a closer affiliation with the cultural and social attributes of their local communities than non-Māori people. Nevertheless, the resilience of the community would be expected to experience a significant downturn associated with a large increase in the unemployment rate and the associated difficulties in finding alternative employment locally.

As an example of the impact of out-migration on the teaching and health care workforce, two scenarios have been examined. The first assumes that 25 percent of those becoming unemployed in each sector move out of the region accompanied by school age children, whilst the second assumes a 50 percent out-migration level. It should be noted that the figures below only address out-migration from those directly impacted by closure of either sector and do not incorporate the flow-on effects.

	Livestock production	Red meat processing
25% out-migration		
Primary school teachers	3	5
Secondary school teachers	2	4
Health care workers	4	6
50% out-migration		
Primary school teachers	6	10
Secondary school teachers	5	8
Health care workers	7	11

The impact on the teaching profession would be more pronounced amongst primary school teachers.

Social Impact on Territorial Authority C

They key characteristics of TA C when compared with New Zealand as a whole are:

- A marginally older population on average with a median age of 38.5 years (compared with 37.4 years for New Zealand). This TA had a similar proportion of the population aged 55 years and above (28.7 percent) to that exhibited nationally (27.2 percent). The TA also had a higher than average proportion of children aged 14 years or below (22.6 percent compared with 19.6 percent for New Zealand), resulting in a higher age dependency ratio at 0.62 than New Zealand as a whole (0.54);
- More than one quarter of the population (27.6 percent) indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 67.5 percent, slightly lower than the national average (68.7 percent) and probably, at least in part, influenced by the age structure of the population. The unemployment rate in the reference period was 6.5 percent compared with 5.8 percent for New Zealand in the same period.
- The TA had a lower proportion of individuals in paid employment, with a higher proportion of those identifying as an employer, self-employed or an unpaid family

- worker. This is likely to be at least in part influenced by the significantly above average level of employment in *Agriculture, forestry & fishing* as described below;
- Occupations described as managers or labourers were both significantly over-represented in the TA when assessed by place of work. Almost 26 percent of those working in the TA were employed in *Agriculture, forestry & fishing* which is likely to impact on the distribution of occupations, bearing in mind that farm managers are classified as “managers”. The TA also had a significantly greater proportion of people employed in *Manufacturing* (24.9 percent) than New Zealand as a whole (9.8 percent);
 - Overall, there was a net outflow from the TA for employment purposes. However, in the *Mining, Manufacturing* and *Utilities* sectors, there were more people employed in the TA than residents of the TA employed in these sectors;
 - Individuals living in the TA had a mean personal income of \$36,340, approximately 6 percent lower than the national average.
 - A higher proportion of residents of the TA received income from self-employment, superannuation and Jobseeker Support than the national average. A concomitant reduction in those receiving wages and salaries from an employer was observed.

The TA had an unemployment level that is approximately 12 percent higher than the New Zealand average. The age dependency ratio is also higher than the national average meaning there is potentially more “pressure” on those in the traditional working age groups (15-64 years) to support the younger and older age cohorts.

Overall, should either the livestock production or red meat processing and exporting sectors cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	8.1%	9.9%
As percentage of current rate	124.1%	151.0%
Total employment impact	10.4%	17.0%
As percentage of current rate	159.2%	260.4%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 8.1 percent if the closure happened overnight. Contingent on the cause of this closure, it could be expected to happen in a more gradual manner and for *livestock production* to be replaced by alternative economic activities which could reasonably be expected

to be related to the *Agriculture & forestry* industry in some form. Dependent on the type of replacement activities, some of the employment lost from *livestock production* might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, the impact on unemployment levels would probably not be of sufficient magnitude to result in significant levels of out-migration.

Closure of the *red meat processing* facility would have a higher impact on the unemployment rate in the TA. The impact of direct job losses would increase the unemployment rate to 9.9 percent whilst the total impact, including flow-on effects, would potentially increase the unemployment rate to 17.0 percent. The concentration of people with similar skill levels leaving the workforce as a result of cessation of *red meat processing* might result in increased difficulty in finding alternative employment and thus extend the period of time spent in unemployment. However, the impact is unlikely to be significant enough to result in high levels of out-migration from the TA. There is already a net inflow of residents from outside the region to work in the TA, particularly those employed in *Manufacturing*. It could therefore be assumed that a proportion of the job losses associated with a closure of the *red meat processing* facility would actually be felt amongst individuals not resident in the TA.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact (i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$4.3m	-\$20.5m
As percentage of current income	-0.6%	-2.6%
Total impact	-\$6.3m	-\$44.0m
As percentage of current income	-1.4%	-8.3%

The decrease in overall personal income levels resulting from closure of the *livestock production* sector would be unlikely to cause a major shift in household expenditure patterns locally. In the short term, it may impact on discretionary household spending, reducing expenditure in restaurants and entertainment facilities, for example. The impact from the closure of *red meat processing*, particularly when flow-on effects are included, would be more significant and could impact on community confidence. This in turn might result in households delaying expenditure on items such as household goods and motor vehicles until confidence in the local economy is restored.

- Impact of out-migration – as noted above, the impact of increased levels of unemployment in this TA would be unlikely to result in significant levels of out-migration. This may also be impacted by the above-average proportion of the population identifying as Māori. Therefore, it is unlikely that the TA would experience a reduction in the number of teachers and health care workers supported by the resident population.

Social Impact on Territorial Authority D

They key characteristics of TA D when compared with New Zealand as a whole are:

- A significantly older population on average with a median age of 43.9 years (compared with 37.4 years for New Zealand). The TA had a higher proportion of the population aged 55 years and above (33.4 percent) compared with that exhibited nationally (27.2 percent). The TA also had a lower than average proportion of children aged 14 years or below (19.2 percent compared with 19.6 percent for New Zealand). The proportion of people aged 65 years and above in particular has resulted in a higher age dependency ratio at 0.60 than New Zealand as a whole (0.54);
- Only 10.2 percent of the population indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 68.0 percent, slightly lower than the national average (68.7 percent). The unemployment rate in the reference period was 5.1 percent compared with 5.8 percent for New Zealand in the same period.
- The TA had a similar structure when analysed by status in employment as New Zealand as a whole;
- Occupations described as labourers were over-represented in the TA when assessed by place of work (16.1 percent compared with 11.3 percent nationally). The TA had a lower than average proportion of people employed in Professional occupations than New Zealand as a whole (17.6 percent compared with 23.0 percent). Although not significant in terms of absolute numbers, the TA had a much higher proportion than the national average of people employed in the *Mining* sector. Other sectors exhibiting above average representation locally were *Health care & social assistance*, *Accommodation & food services* and *Transport, postal & warehousing*;
- Overall, there was a net outflow from the TA for employment purposes across the majority of industry sectors;
- Individuals living in the TA had a mean personal income of \$35,720, approximately 8 percent lower than the national average.
- A higher proportion of residents of the TA received income from superannuation and Veteran's pensions than the national average. The proportion of those receiving wages and salaries from an employer was similar to the national average.

The TA had an unemployment level that is approximately 13 percent lower than the New Zealand average. The age dependency ratio is higher than the national average meaning there is potentially more “pressure” on those in the traditional working age groups (15-64 years) to support the younger and older age cohorts.

Overall, should either the *livestock production* or *red meat processing* sector cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	5.6%	11.9%
As percentage of current rate	111.2%	235.0%
Total employment impact	6.5%	26.6%
As percentage of current rate	128.9%	524.4%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 5.6 percent if the closure happened overnight. Contingent on the cause of this closure, it could be expected to happen in a more gradual manner and for *livestock production* to be replaced by alternative economic activities which might reasonably be expected to be in other components of the Agriculture & forestry industry. Dependent on the type of replacement activities, some of the employment lost from *livestock production* might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, the impact on unemployment levels would probably not be of sufficient magnitude to result in significant levels of out-migration, particularly given the generally older age distribution of the local population and employees in *Agriculture* in general.

Closure of the *red meat processing* facility would have a much higher impact on the unemployment rate in the TA. The impact of direct job losses would increase the unemployment rate to 11.9 percent whilst the total impact, including flow-on effects, would potentially increase the unemployment rate to 26.6 percent. The concentration of people with similar skill levels leaving the workforce as a result of cessation of *red meat processing* might result in increased difficulty in finding alternative employment locally and thus extend the period of time spent in unemployment. The local impact could be sufficient to result in out-migration from the TA.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact (i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$0.8m	-\$21.1m
As percentage of current income	-0.2%	-5.5%
Total impact	-\$1.2m	-\$37.7m
As percentage of current income	-0.5%	-15.3%

The decrease in overall personal income levels resulting from closure of the *livestock production* sector would be unlikely to cause a major shift in household expenditure patterns locally. In the short term, it may impact on discretionary household spending, reducing expenditure in restaurants and entertainment facilities, for example. The impact from the closure of *red meat processing*, particularly when flow-on effects are included, would be more significant and could impact on community confidence. However, the magnitude of the impact could also affect the ability amongst some households to make rental or mortgage payments. The flow-on effects from this could result in a fall in housing values (both owner-occupied and rental properties).

- Impact of out-migration – as noted above, the impact of increased levels of unemployment in this TA as a result of closure of the *livestock production* sector would be unlikely to result in significant levels of out-migration. However, cessation of operations in the *red meat processing* sector could have the effect of some individuals choosing to move out of the TA to seek employment elsewhere.

As an example of the impact of out-migration on the teaching and health care workforce, two scenarios have been examined. The first assumes that 25 percent of those becoming unemployed in the *red meat processing* sector move out of the region accompanied by school age children, whilst the second assumes a 50 percent out-migration level. It should be noted that the figures below only address out-migration from those directly impacted by closure of the sector and do not incorporate the flow-on effects.

Red meat processing

25% out-migration

Primary school teachers	5
Secondary school teachers	3
Health care workers	14

50% out-migration

Primary school teachers	9
Secondary school teachers	6
Health care workers	28

The impact on the teaching profession would be more pronounced amongst primary school teachers. There would also be a substantial drop in health care workers locally.

Social Impact on Territorial Authority E

The key characteristics of TA E when compared with New Zealand as a whole are:

- A significantly older population on average with a median age of 42.6 years (compared with 37.4 years for New Zealand). The TA had a higher proportion of the population aged 55 years and above (31.8 percent) compared with that exhibited nationally (27.2 percent). The TA also had a slightly lower than average proportion of children aged 14 years or below (19.3 percent compared with 19.6 percent for New Zealand). Overall, the TA had a slightly higher age dependency ratio at 0.58 than New Zealand as a whole (0.54);
- Only 12.4 percent of the population indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 71.3 percent, significantly higher than the national average (68.7 percent). The unemployment rate in the reference period was lower at 3.9 percent than across New Zealand in the same period (5.8 percent).
- The TA had a lower proportion of individuals in paid employment, with a higher proportion of those identifying as an employer, self-employed or an unpaid family worker. This is likely to be at least in part influenced by the significantly above average level of employment in *Agriculture, forestry & fishing* as described below;
- Occupations described as managers or labourers were both significantly over-represented in the TA when assessed by place of work. Almost 34 percent of those working in the TA were employed in *Agriculture, forestry & fishing* which is likely to impact on the distribution of occupations, bearing in mind that farm managers are classified as “managers”. The TA also had a significantly greater proportion of people employed in *Manufacturing* (15.9 percent) than New Zealand as a whole (9.8 percent);
- Overall, there was a net outflow from the TA for employment purposes across all industry sectors with the exception of *Public administration & safety*;
- Individuals living in the TA had a mean personal income of \$36,730, approximately 5 percent lower than the national average.
- A higher proportion of residents of the TA received income from self-employment, superannuation and Veteran’s pensions than the national average.

The proportion of those receiving wages and salaries from an employer was similar to the national average.

The TA had an unemployment level that is approximately 34 percent lower than the New Zealand average. The age dependency ratio is marginally higher than the national average meaning.

Overall, should either the *livestock production* or *red meat processing* sector cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	10.6%	22.2%
As percentage of current rate	274.9%	573.8%
Total employment impact	21.4%	61.5%
As percentage of current rate	553.2%	1,589.9%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 10.6 percent if the closure happened overnight. The extent of these impacts would be contingent on the extent to which employment in *livestock production* can be replaced by alternative economic activities. It could be expected that the majority of land currently utilised for cattle and sheep production would be utilised for other activities related to the overall *Agriculture & forestry* industry. Dependent on the type of replacement activities, some of the employment lost from livestock production might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, the impact on unemployment levels, particularly when flow-on effects are included, would probably be of sufficient magnitude to result in significant levels of out-migration. The TA already has a below average unemployment rate and an above average labour force participation rate, suggesting that finding new employment opportunities locally could be difficult.

Closure of the *red meat processing* facility would have an even greater impact on the unemployment rate in the TA. The impact of direct job losses would increase the unemployment rate to 22.2 percent whilst the total impact, including flow-on effects, would potentially increase the unemployment rate to 61.5 percent. The concentration of people with similar skill levels leaving the workforce as a result of cessation of *red meat processing* might result in increased difficulty in finding alternative employment and thus extend the period of time spent in

unemployment. The local impact would be expected sufficient to induce significant out-migration from the TA.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact (i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$13.2m	-\$80.3m
As percentage of current income	-2.5%	-15.3%
Total impact	-\$20.9m	-\$143.8m
As percentage of current income	-6.5%	-42.8%

The decrease in overall personal income levels resulting from closure of the *livestock production* sector could cause a major shift in household expenditure patterns locally. Whilst it would be expected to impact on discretionary household spending, reducing expenditure in restaurants and entertainment facilities, for example, it could also have more significant impacts on more basic living expenses. The impact from the closure of *red meat processing*, particularly when flow-on effects are included, would be substantial. The magnitude of the impact could affect the ability amongst some households to make rental or mortgage payments. The flow-on effects from this could result in a fall in housing values (both owner-occupied and rental properties).

- Impact of out-migration – as noted above, the impact of increased levels of unemployment in this TA as a result of closure of the *livestock production* sector could result in significant levels of out-migration. Cessation of operations in the *red meat processing* sector could have the effect of a significant proportion of individuals choosing to move out of the TA to seek employment elsewhere.

As an example of the impact of out-migration on the teaching and health care workforce, two scenarios have been examined. The first assumes that 25 percent of those becoming unemployed in each sector move out of the region accompanied by school age children, whilst the second assumes a 50 percent out-migration level. It should be noted that the figures below only address out-migration from those directly impacted by closure of the sectors and do not incorporate the flow-on effects.

	Livestock production	Red meat processing
25% out-migration		
Primary school teachers	5	14
Secondary school teachers	5	14
Health care workers	9	26
50% out-migration		
Primary school teachers	10	28
Secondary school teachers	10	28
Health care workers	18	53

The impact on the teaching profession would be similar across primary and secondary schools. There would also be a substantial drop in health care workers locally.

Social Impact on Territorial Authority F

They key characteristics of TA F when compared with New Zealand as a whole are:

- A significantly older population on average with a median age of 44.4 years (compared with 37.4 years for New Zealand). The TA had a higher proportion of the population aged 55 years and above (33.8 percent) compared with that exhibited nationally (27.2 percent). However, the TA also had a lower than average proportion of children aged 14 years or below (16.8 percent compared with 19.6 percent for New Zealand). These factors balance each other, resulting in the TA having an age dependency ratio of 0.53, very similar to New Zealand as a whole (0.54);
- Approximately 14.4 percent of the population indicated that they were in the Māori ethnic group, compared with 16.5 percent for the national average;
- The labour force participation rate was 73.2 percent, significantly higher than the national average (68.7 percent). The unemployment rate in the reference period was substantially lower at 2.9 percent than across New Zealand in the same period (5.8 percent).
- The TA had a lower proportion of individuals in paid employment but an above average proportion categorised as employer, self-employed or unpaid family worker;
- Occupations described as managers or labourers were both significantly over-represented in the TA when assessed by place of work, whilst professional occupations were substantially under-represented. The TA had a significantly greater proportion of people employed in *Manufacturing* (14.1 percent) than New Zealand as a whole (9.8 percent). It also had above average representation in *Mining, Accommodation & food services* and *Agriculture, forestry & fishing*;

- Overall, there was a net outflow from the TA for employment purposes across all industry sectors;
- Individuals living in the TA had a mean personal income of \$36,870, approximately 5 percent lower than the national average.
- A higher proportion of residents of the TA received income from self-employment, superannuation and Veteran's pensions than the national average. The proportion of those receiving wages and salaries from an employer was similar to the national average.

The TA had an unemployment level that is significantly lower (approximately half) than the New Zealand average. In addition, the age dependency ratio is marginally lower than the national average suggesting similar levels of support for the younger and older cohorts and potentially higher than average levels of productivity locally.

Overall, should either the livestock production or red meat processing and exporting sectors cease operations in this TA, the immediate impacts would be as follows:

- Unemployment rate – the impact is summarised below in terms of the direct impact (i.e. the jobs lost in each sector) and the total impact (i.e. incorporating flow-on impacts in terms of jobs lost):

	Livestock production	Red meat processing
Direct employment impact	4.2%	4.9%
As percentage of current rate	144.7%	169.3%
Total employment impact	6.3%	9.2%
As percentage of current rate	215.8%	317.9%

Cessation of the *livestock production* sector would have a direct impact of increasing the unemployment rate to approximately 4.2 percent if the closure happened overnight. The extent of these impacts would be contingent on the extent to which employment in *livestock production* can be replaced by alternative economic activities. It could be expected that the majority of land currently utilised for *livestock production* would be utilised for other activities related to the overall *Agriculture & forestry* industry. Dependent on the type of replacement activities, some of the employment lost from *livestock production* might be absorbed in the new sector(s) although this would be impacted by suitability of land type, skills requirements and labour intensity per hectare. However, overall it is unlikely that cessation of the *livestock production* sector would result in significant out-migration, particularly given the generally older profile of the population.

Closure of the *red meat processing* facility would have a higher impact on the unemployment rate in the TA. The impact of direct job losses would increase the unemployment rate to 4.9 percent whilst the total impact, including flow-on

effects, would potentially increase the unemployment rate to 9.2 percent. The concentration of people with similar skill levels leaving the workforce as a result of cessation of *red meat processing* might result in increased difficulty in finding alternative employment and thus extend the period of time spent in unemployment. However, the impact is unlikely to be significant enough to result in high levels of out-migration from the TA. There is already a net outflow of residents from the region to work elsewhere, particularly those employed in *Manufacturing*. As the TA is already operating at levels that could be defined as close to full employment, it might be reasonable to assume that local businesses might be able to absorb a proportion of the newly unemployed.

- Personal income – the impact of loss of personal income in the TA in terms of direct impact (i.e. that resulting from jobs lost in each sector) and the total impact (i.e. incorporating the income lost from direct and flow-on jobs lost in each sector) is summarised below:

	Livestock production	Red meat processing
Direct impact	-\$1.31m	-\$4.6m
As percentage of current income	-0.5%	-1.7%
Total impact	-\$2.1m	-\$8.2m
As percentage of current income	-1.3%	-4.8%

The decrease in overall personal income levels would be unlikely to cause a major shift in household expenditure patterns locally. In the short term, it may impact on discretionary household spending, reducing expenditure in restaurants and entertainment facilities, for example.

- Impact of out-migration – as noted above, the impact of increased levels of unemployment in this TA would be unlikely to result in significant levels of out-migration. Therefore, it is unlikely that the TA would experience a reduction in the number of teachers and health care workers supported by the resident population.

5.3 Summary

The analysis of potential social impacts from cessation of either the *livestock production* sector or the *red meat processing and exporting* sector in each of the six TAs examined indicates wide variations in terms of detrimental effect. Some have differential impacts as between the production and processing sectors, but only one has low impacts from both, with all the others having at least medium impacts from either production or processing. These differential impacts are influenced by a number of factors including:

- Significance of the sectors in terms of overall employment;
- Current unemployment rate;

- Current income levels; and
- Population demographics.

A summary of the potential negative social impacts for each TA by industry sector is provided below. It should be noted that this is a subjective ranking and does not make quantitative comparisons between individual TAs.

Territorial Authority	Livestock production	Red meat processing	Comments
A	High	Low	With a higher than average unemployment rate, the number of jobs lost in <i>livestock production</i> could result in younger workers moving away.
B	High	High	The TA has an unemployment rate that is almost twice the national average – job losses in either sector as a result of cessation of operations could result in unemployment levels that make the community unsustainable.
C	Low	Medium	The TA could be expected to have the capacity to absorb job losses in the <i>livestock production</i> sector, given the anticipated magnitude and resultant impact on unemployment levels. Losses in the <i>red meat processing</i> sector are estimated to include residents from outside the TA, reducing the net local effect.
D	Low	High	Whilst the impact of cessation of the <i>livestock production</i> sector would have a relatively small impact on local unemployment levels, that resulting from cessation of <i>red meat processing</i> would be significant, potentially resulting in population loss through out-migration.
E	High	High	Almost 50% of the workforce is currently employed in either Agriculture, forestry & fishing or Manufacturing, which includes <i>red meat processing</i> . The significant impacts on the unemployment level and personal income would be expected to result in net population loss.
F	Low	Low	The TA has an unemployment rate that is about half the national average, suggesting that the additional unemployed may find alternative employment more readily.

6.0 Social impact at the individual level

Clearly the first and most measurable impact on the individual, and their associated family if applicable, is a loss of income. However, the impact on the self-esteem of the employee and the associated psychological impacts on their partner and children can be equally, if not more, significant⁵⁴.

It has been noted that “People who lose their jobs unexpectedly are likely to take about six weeks to come to terms with their situation; during that time many will feel paralysed and unable to search for work effectively”.⁵⁵ This situation can be exacerbated amongst those employees who, whilst not necessarily being concerned about the “prestige” of their employment, perceive their workplace to be their main avenue of social interaction.

The ability for individuals to obtain new employment can be affected by a number of characteristics including:

- Age – older workers are more likely to face difficulties in obtaining a new position;
- Qualifications and experience – those with lower qualifications and skills may find it more difficult to find new employment, although they may be more likely to accept “any job”. Conversely, those with high skill levels may find it easier to obtain a new position but it may not fully utilise their expertise;
- Literacy and numeracy levels – those with lower levels of literacy and numeracy may also find it more difficult to obtain new employment;
- Ability and willingness to relocate – younger workers without either dependents or financial commitments may find it easier to relocate when seeking new employment. However, those with a partner in employment and / or school-age children may find relocation more difficult, as will those with strong community ties. There are also financial considerations associated with relocating. Housing costs in areas with greater employment opportunities may well be higher. When combined with a likely financial loss from selling their existing home if it has to be done urgently or if coinciding with other individuals in the same position, this can make relocation appear impossible;
- Financial security – those workers who have savings or a partner in full time employment may be able to take time to seek new job opportunities that suit their needs and requirements. However, those in financial stress may well be obliged to take any job opportunity that generates an income.

Notwithstanding the ability to find new employment, sudden job loss can have significant long term impacts on the individual. There is the direct loss of income which has an immediate effect and may result in having to draw on savings (if any), loss of superannuation contributions impacting on retirement options and the likelihood that

⁵⁴ Mendolia, S. The impact of job loss on family mental health. University of New South Wales. 2009

⁵⁵ <http://theconversation.com/what-the-departure-of-toyota-holden-and-ford-really-means-for-workers-23137>

any new employment found will be at a lower skill level and remuneration than that previously held.

The impact on the physical and psychological health of the individual and their dependents cannot be underestimated. As noted in the literature review, unemployment can have significant detrimental effects in terms of health outcomes. Of particular concern is the proportion of the workforce in some regions who identify as Māori. These individuals are, on the whole, subject to greater socio-economic disadvantage and more susceptible to physical and psychological health issues.

7.0 Conclusions

The social impact of cessation of the livestock production, red meat processing and exporting sector or the red meat industry in aggregate across New Zealand would have a significant negative impact on Federal Government revenue through loss of income from personal and corporate tax and increased expenditure on welfare and health care costs. Overall, the closure of the red meat industry in aggregate is estimated to have a negative impact on central government net revenue of approximately \$1.6 billion and would reduce GDP by approximately \$12 billion

Some *livestock production* and *red meat processing* employees could be expected to obtain employment in alternative enterprises. However, the assumption that this will happen automatically and seamlessly is not realistic.

For example, employment in the *livestock production* sector in particular might be expected to be replaced by other economic activities which would be primarily expected to incorporate other sub-sectors of the *Agriculture, forestry & fishing* industry. However, depending upon the type of replacement activities and the associated timeframe for establishment and relative labour intensity, these national social impacts could continue for an extended period.

At the community level, the social impacts can vary markedly, with some communities being more capable of withstanding the change than others. In some cases, it is expected that the local impact could be such that significant levels of out-migration could take place which potentially results in the community becomes unsustainable.

Individual social impacts are primarily associated with job loss, the associated loss of income and the potential impacts on physical and psychological wellbeing. Whilst this can be associated with the closure of any business, the high concentration of people with similar skills as is found in *livestock production*, and more significantly in *red meat processing*, can exacerbate these issues through greater difficulty in finding alternative employment. For those regions with a high proportion of people identifying as Māori, this issue could be even more intensified.

In conclusion, any government policy measures that would significantly affect the *red meat industry* should consider the potential implications more broadly, given the very substantial impacts that the industry has on the broader wellbeing of the country, not only nationally but at the community and individual levels.

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