

Submission by



to the

Ministry for the Environment

on the

**Pricing Agricultural Emissions
Discussion Document**

18 November 2022

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SUBMISSION SUMMARY

- The approach outlined in the Document is contrary to the Paris Agreement's objectives in the context of food security, and lacks acknowledgement of different national circumstances and consideration for vulnerable groups and communities.
- The estimated impact on New Zealand's export receipts and specifically the impact on the meat and dairy sectors as reported in the Document will be significant. Further to this point, New Zealand's economy is heavily supported by agricultural export earnings. The food and fibre exports sector makes up 14 per cent of the New Zealand economy.
- Given New Zealand products are already marketed as being 'premium', 'sustainable', 'organic', and 'green' as well as the demographics of emerging markets of opportunity, we are doubtful that 'carbon-neutral' positioning would have the intended market impact.
- The proposed course of action outlined in the Document could potentially mean New Zealand loses its comparative advantage in the dairy and meat exports sector due to loss of production and therefore export volumes. If the only solution currently available is to cut agricultural product, then we are focused too narrowly on "what" goods are being produced and therefore harming our comparative advantage.
- Planting trees is one of the lowest-cost emission reduction actions that can be taken and the rest of the world will be planting trees as well. This could result in a permanent decrease in export revenues and lock in land use change. Carbon-only farming also has a significant impact on both up and downstream industries and jobs in the region.
- The document is taking a New Zealand-centric approach to a global problem, and not accurately measuring the risks of emissions leakage. Emissions leakage risk is particularly high given that no other country in the world has put a price on agricultural emissions. The modelling used in the document does not accurately represent New Zealand's agricultural emissions profile which skews the analysis of the potential for emissions leakage.
- This submission illustrates statistically how pricing of agricultural emissions could affect industries upstream and downstream of agriculture, and on the communities where they are located.
- Three upstream industries (Fertiliser and pesticides, Veterinary services, and Agriculture support services) can be said to be critically dependent on sheep, beef and dairy farming). Virtually all the outputs of sheep, beef and dairy farming go to just two downstream industries: Meat processing and Dairy processing.
- It is estimated that 54,607 jobs in the key upstream and downstream industries nationally are vulnerable, if agricultural emissions become subject to pricing. This excludes vulnerable on-farm employment in sheep, beef and dairy farming, which, together, employ a further 44,500 people.
- Five Districts in New Zealand have more than 40% of their total employment in the vulnerable upstream and downstream industries, and in sheep, beef and dairy farming. The equivalent proportions are 30-40% in 6 other Districts, and a 20-30% in a further 10 Districts.
- Some communities will be devastated, and some are likely to become unviable through employment and population loss.
- There might be some offsetting impacts from the alternative land uses to replace sheep, beef and dairy farms that are lost but, at minimum, affected local economies will experience very large upheaval.

1.0 INTRODUCTION

- 1.1** Business New Zealand and Export New Zealand (BusinessNZ and ExportNZ) welcome the opportunity to submit on the Ministry for the Environment's *Pricing Agricultural Emissions* Consultation Document (the Document).
- 1.2** Our submission outlines several concerns BusinessNZ & ExportNZ has with the proposal put forward by the Ministry for the Environment (MfE) and it is our strong suggestion that the Government returns to the proposed recommendations put forward by He Waka Eke Noa – the partnership between the sector, iwi, and the Government.
- 1.3** Any proposal should also ensure that no emissions leakage or reductions in food production occurs.
- 1.4** BusinessNZ and ExportNZ are committed to helping New Zealand achieve the obligations made within the 2015 Paris Agreement. Action should be taken in partnership with industries and businesses to ensure that effective action is taken to support climate action and to meet New Zealand's Paris Agreement obligations. As such, BusinessNZ and ExportNZ engage regularly in New Zealand's climate change policy through our other BusinessNZ sector brands.
- 1.5** BusinessNZ and ExportNZ believe that the New Zealand agricultural sector is a world leader in agricultural production while also being among the most emissions-efficient livestock farmers in the world.
- 1.6** With our commitment to achieving the Paris Agreement obligations, we believe that the sector needs to continue to innovate and find solutions to lower sector emissions effectively and efficiently.
- 1.7** However, BusinessNZ and ExportNZ are concerned that MfE and the Government have not taken into serious consideration the significant impacts on New Zealand's export sector or regional economies should the proposals in the Document be implemented.
- 1.8** Our submission details our main concerns with the document's proposals, namely:
- Recommendations from the IPCC
 - Impact on New Zealand's Export Value
 - Carbon Leakage
 - Land Use Changes
 - Impact on Rural Communities
- 1.9** BusinessNZ and ExportNZ would be happy to engage with officials on any work on this document going forward.

2.0 GENERAL COMMENTS

Recommended Course of Action by the IPCC

- 2.1** The Intergovernmental Panel on Climate Change (IPCC) never intended for food production to be impacted by emissions reduction plans.
- 2.2** BusinessNZ and ExportNZ are supportive of climate action and the Paris Agreement. It is vital that the New Zealand economy and agricultural sector transition to becoming carbon neutral. Climate change is a global challenge, it is important that New Zealand plays its

part in a way that considers the global context. The approach outlined is contrary to the Agreement's objectives in the context of food security, and lacks acknowledgement of different national circumstances and consideration for vulnerable groups and communities.

2.3 Article 2.1. (b) of the Paris Agreement states that;

"Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production".¹

2.4 The Paris Agreement recognizes the fundamental priority of safeguarding food security. This is at odds with the potential outcomes of the proposed changes which modelling expects will drive down agricultural production by as much as 9.8% for milk solids, 23.6% for lamb, and 65.4% for beef.

2.5 Article 4.3. states that;

"Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances."²

2.6 New Zealand is the most efficient producers of milk in the world.³ Shifting production to more carbon-intensive producers does not align with the objectives of the agreement. Reducing food production domestically takes a very New Zealand-centric approach to a global problem.

2.7 The paper 'Pricing agricultural GHG emissions: impacts on emissions leakage' released by He Waka E Noa states that;

"With partial (50%) offsetting of emissions, there could be a 15% increase in global emissions for every tonne of emissions reduced in New Zealand from lower output of beef.... The equivalent estimates for sheep and dairy production are emissions increases of 7% and 30% respectively."⁴

2.8 Further to this point, New Zealand's economy is heavily supported by agricultural export earnings. Earlier this year, New Zealand food and fibre export earnings were \$53.3 billion for the year ending June 2022.⁵ Given Statistics measured total GDP to be \$360 billion for the year ending June 2022, the food and fibre exports sector makes up 14 per cent of the New Zealand economy.⁶

¹ https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf, Page 2.

² Ibid., Page 3.

³ <https://www.dairynz.co.nz/media/5794083/mapping-the-carbon-footprint-of-milk-for-dairy-cows-report-updated.pdf>

⁴ <https://hewakaekenoa.nz/wp-content/uploads/2022/06/FINAL-Pricing-agricultural-GHG-emissions-impacts-on-emissions-leakage.pdf>, Page 19

⁵ <https://www.beehive.govt.nz/release/new-zealand-food-and-fibre-exports-leap-533-billion-result>

⁶ <https://www.stats.govt.nz/indicators/gross-domestic-product-gdp/>

2.9 Article 7.5. of the Paris Agreement states that;

*"Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate."*⁷

2.10 New Zealand's rural communities will be heavily impacted by the proposals outlined through reductions in on-farm employment and the impact on business reduction for the upstream and downstream industries. The consequences of the scaling down of agriculture in rural communities whose economy is heavily reliant on the agricultural sector, could make wrap-around services such as schooling, retail, and healthcare unsustainable through employment and population loss.

Impact on New Zealand's Export Value

Impact on Total Export Value

2.11 As the peak representative body for exporters, ExportNZ is concerned with the estimated impact on New Zealand's export receipts and specifically the impact on the meat and dairy sectors as reported in the Document.

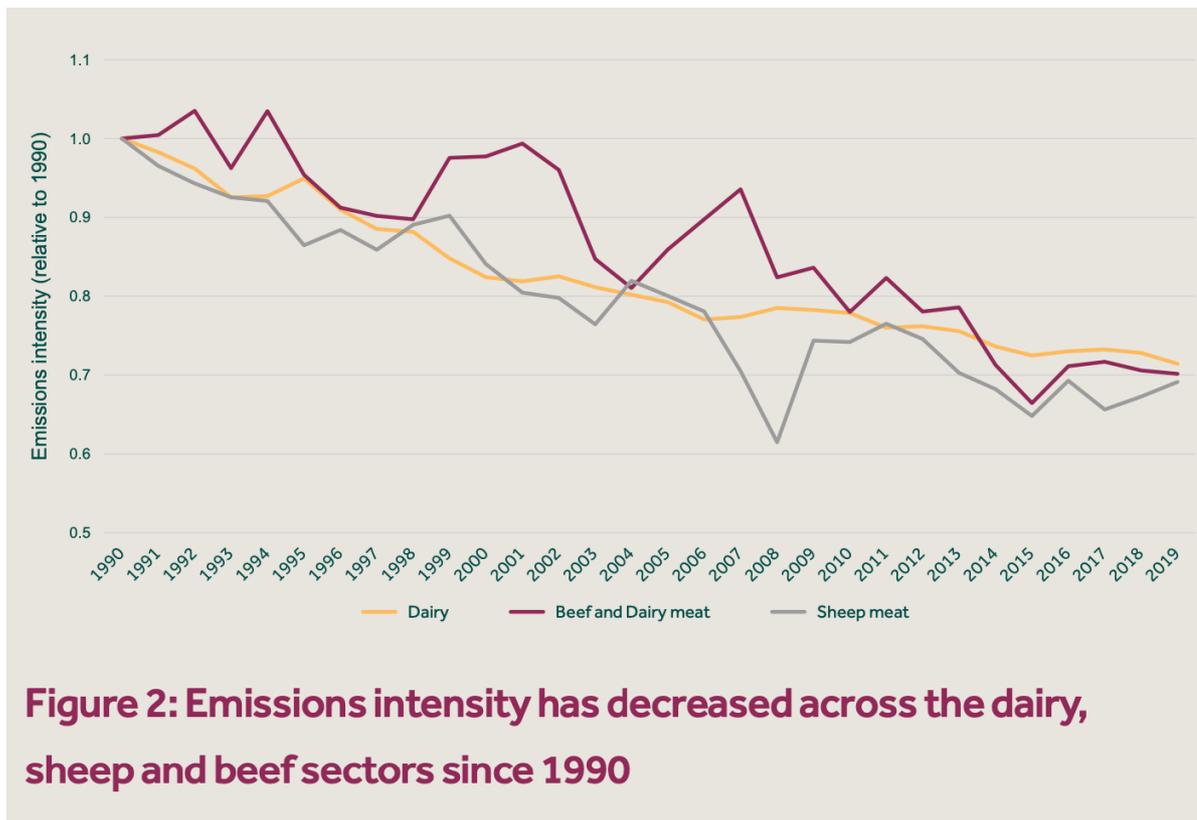
2.12 The New Zealand Government contributed the below to the paper "*Compendium of Country Cases Studies: Accelerating Transition to Sustainable Agriculture*" during COP26 in 2021;

"New Zealand has a natural advantage in agricultural production and the primary industries play a significant role in our economy. Whilst not a large producer in global terms, New Zealand exports 85 per cent of total food produced and agriculture makes up around 10 per cent of GDP and 75 per cent of merchandise exports...."

*"Agriculture's share of GDP has continued to grow, and productivity has quadrupled, while emissions per unit of product have continued to decline [figure 2]. This has been achieved despite our key exports generally facing high tariff barriers and heavily subsidised competition."*⁸

⁷ https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf, Page 6.

⁸ <https://just.ruraltransition.org/case-study/compendium-of-country-case-studies/>



2.13 The Government acknowledges the significant part the agricultural sector plays in the New Zealand export sector and in the economy as a whole.⁹ The Government also widely celebrates the fact that New Zealand agricultural businesses are playing their part in emission reduction as evident in the above statement in the COP 26 paper, and also in a press release celebrating New Zealand being ranked first on the Sustainable Trade Index.¹⁰

2.14 The Document outlines the significant impact on agricultural production and export value, stating,

“Because the meat and dairy sectors are Aotearoa New Zealand’s two largest export earners, the total revenue of the agricultural sector is significantly affected.”¹¹

2.15 Pages 61-62 of the Document also states;

“Dairy, meat and wool products comprise over half of Aotearoa New Zealand’s export revenue, with most agricultural production exported into world markets, where it competes with products from other countries. Any loss in production associated with Aotearoa New Zealand’s emissions reduction will reduce the amount of product sent to world markets.”¹²

2.16 While the document mentions a significant impact on agricultural production and therefore a decrease in agricultural exports sent overseas, the Document states that the loss in export revenue from agricultural products can be balanced out by new demand for carbon-neutral products in overseas markets.

⁹ <https://www.beehive.govt.nz/release/new-zealand-food-and-fibre-exports-leap-533-billion-result>

¹⁰ <https://www.beehive.govt.nz/release/new-zealand-ranked-first-sustainable-trade-index>

¹¹ <https://environment.govt.nz/assets/publications/Pricing-agricultural-emissions-consultation-document.pdf>, pg. 60.

¹² Ibid., pg. 61-62.

- 2.17** ExportNZ is concerned that the research and reasoning behind the claims that carbon-neutral products can balance out any loss in export revenue are weak and the analysis is not as detailed as it to be.
- 2.18** The vast majority of New Zealand's meat and dairy exports are to China, while the United States of America (USA) is also an important market for New Zealand meat (although the value of meat exports to China is almost twice that to the USA).
- 2.19** While there may be markets with a growing demand for carbon-neutral products, ExportNZ believes there are market issues in key markets that will prevent New Zealand agricultural export access to the point it can balance out the potential deficit stated in the Document.
- 2.20** The European Union's reluctance to give New Zealand significant red meat and dairy quotas in the EU-NZ free trade agreement negotiations is well publicised, and those quotas are unlikely to increase as the FTA will not be renegotiated any time soon. It is already proven that New Zealand red meat production is less carbon intensive than European-produced products, but this fact does not make a difference to European trade negotiators who are pressured by European farmer lobbies to tilt the market in their favour.
- 2.21** As stated above, the USA is currently the second-largest market for New Zealand meat. However, the lack of a free trade agreement with the United States coupled with a strong agricultural lobby and government-subsidised agricultural production will make it difficult to grow this market and sell enough premium meat and dairy products to make up the deficit estimated in the Document.
- 2.22** New Zealand has high-quality free trade agreements with Australia and once implemented, a bilateral agreement with the United Kingdom (UK). While these agreements allow effective access into these markets. These markets have their own strong meat and dairy industries with a local market that prefer to support locally produced products. Therefore, New Zealand would not be able to rely on these markets for significant business.
- 2.23** Equally, we can point to recent research by New Zealand Trade & Enterprise "*What Sustainability Means to F&B Consumers in Top Export Markets*".¹³ This study looked at consumers in the 5 top export markets for New Zealand (Australia, China, Japan, the UK, and the USA), and what they look for when shopping 'sustainably'.
- 2.24** The NZTE report shows that there are potential markets for products labelled as 'sustainable'. But the fact is that 'sustainable' has a completely different meaning in key markets for New Zealand agricultural product. 'Carbon-neutral' is mentioned for Western markets, but as mentioned above there are market issues that will make it difficult for New Zealand product to balance out the potential production losses.
- 2.25** Notably for the claims in the Document, the report shows that the biggest barrier to consumers in export markets buying sustainably was cost. So, while there may be a market for premium agricultural products, there are certain price points that consumers will not pay over. This is an issue for our red meat and dairy sector as products are already in the high-to-top tier of price point and New Zealand products are already

¹³ <https://my.nzte.govt.nz/article2/what-sustainability-means-to-f-and-b-consumers-in-top-export-markets>

marketed as being 'premium', 'sustainable', 'organic', and 'green' as they are – relative to market competition.

- 2.26** The industries see the next opportunities being India and Africa as new markets to access due to the growing middle classes and the need to access new food sources. Neither of these markets are mentioned in the studies referenced in the Document, and while there would be market opportunities in these two regions, ExportNZ is doubtful that 'carbon-neutral' positioning would have the intended market impact.

Threat to New Zealand's Comparative Advantage

- 2.27** ExportNZ is also concerned that the proposal course of action outlined in the Document could potentially mean New Zealand loses its comparative advantage in the dairy and meat exports sector due to loss of production and therefore export volumes.

- 2.28** The report *New Zealand's Export Advantage: Composition and Performance of New Zealand's Comparative Advantage from 1995 – 2018*¹⁴ (the MBIE report) released by the Ministry of Business, Innovation, and Employment (MBIE) in July 2022 measures the comparative advantages that New Zealand's goods exports have over international competition.

- 2.29** The MBIE report found that New Zealand's comparative advantages are tied strongly to our agricultural production and while there has been much effort to diversify into new product lines and specialised goods, the export value of the goods with a sustained comparative advantage (mainly those directly from or derived from the agricultural sector) has in fact grown between 1995 (69.8 per cent of total merchandise export value) and 2018 (73.9 per cent of total merchandise export value).

- 2.30** The Document does not give the agricultural sector, and more specifically the meat and dairy sectors, any certainty or confidence that the direction the government is moving the sector in will lead to continued growth and obvious opportunities.

- 2.31** The Document lacks any evidence to show that our historic comparative advantage in dairy and meat exports will continue with the proposed initiatives. We only need to point to policy decisions made for the oil & gas industry sector to show that the government needs to significantly improve its understanding of the wide-ranging economic implications of these significant policy decisions.

- 2.32** The MBIE report also states:

"Global megatrends such as climate change and the increasing scrutiny that emissions-intensive industries are placed under, reiterate the continued importance of policy settings that influence "how" goods are produced in New Zealand, rather than the narrow focus on "what" goods are produced.

- 2.33** If the only solution currently available is to cut agricultural production, then we are focused too narrowly on "what" goods are being produced and therefore harming our comparative advantage. The focus needs to be on how we are producing these goods and needs to be focused more on investing in new agricultural research and systems to lower carbon emissions.

¹⁴ [https://www.mbie.govt.nz/dmsdocument/23289-nz-export-advantage-composition-and-performance-of-nz-comparative-advantages-from-1995-2018-pdf#:~:text=New%20Zealand's%20comparative%20advantages%20reflect,at%20the%20HS6%20digit%20level\).](https://www.mbie.govt.nz/dmsdocument/23289-nz-export-advantage-composition-and-performance-of-nz-comparative-advantages-from-1995-2018-pdf#:~:text=New%20Zealand's%20comparative%20advantages%20reflect,at%20the%20HS6%20digit%20level).) Pg 16.

Land Use Changes

- 2.34** ExportNZ is supportive of policies that incentivise biodiversity. Forestry plays an important role, both as a productive industry and in helping to reach New Zealand's climate change commitments and goals. However, ExportNZ is concerned that the scale and pace of change from food-producing land to afforestation could have serious consequences for both good exports and the local communities in these regions.
- 2.35** As outlined previously, New Zealand is a leading producer of low-emissions food vis-à-vis other countries and food makes up a significant percentage of our goods exports. Food exports have seen the New Zealand economy weather both the Global Financial Crisis and now Covid19, and while our economy is diversifying and will continue to diversify, food exports are an important global competitive advantage for New Zealand when it comes to our export earnings.
- 2.36** Planting trees is one of the lowest-cost emissions reduction actions that can be taken and the rest of the world will be planting trees as well. As such there will undoubtedly be an oversupply of trees in the future, which could lead to a collapse in prices and owners of plantations failing to maintain them, so policy needs to ensure this does not become a problem.
- 2.37** The proposed changes in conjunction with the current settings in the New Zealand Emissions Trading Scheme (ETS) are likely to result in an acceleration of afforestation on historically productive farmland.
- 2.38** The Managing Exotic Afforestation Incentives Interim Regulatory Impact Statement states that:
- "Since the decision to introduce this category in 2020, carbon prices traded within the NZ ETS have doubled from around \$35 at the time the Amendment Act was passed, to upwards of \$78 today (spot price for NZUs - CommTrade, 8 Feb 2022). This increase in carbon price has significantly increased the return for permanent exotic forests relative to competing land uses (for example, sheep and beef, production forestry, indigenous forestry and bush)."*
- 2.39** This could result in a permanent decrease in export revenues. Carbon-only farming also has significant impact on both up and downstream industries and jobs in the region as there is no harvesting, nor any exports. Unlike previous historic land use change scenarios from sheep to dairy, this time the decrease in revenue and the land use change would likely be permanent.

Risks of Carbon Leakage

- 2.40** ExportNZ is concerned that the proposal is taking a New Zealand-centric approach to a global problem, and not accurately measuring the risks of emissions leakage. Emissions leakage risk is particularly high given that no other country in the world has put a price on agricultural emissions.
- 2.41** Given New Zealand's efficient pastoral grazing system, New Zealand farmers are amongst the most emission-efficient food producers in the world. Imposing emissions costs on agriculture, when no other country is, could result in fewer cows and sheep on New Zealand pasture, and increased stock in feedlots overseas.

- 2.42** ExportNZ is concerned that the modelling used to present the risks of emissions leakage does not accurately reflect New Zealand's agricultural emissions profile and as a result underestimates the risk of global emissions leakage. The FAO Tier 1 emissions data presented in table 9 of the document is known to significantly overestimate the emissions intensity of New Zealand milk relative to other alternative milk producers. For example, the use of global proxies in Tier 1 emissions intensity calculations for milk results in New Zealand being ranked as the 59th lowest emissions intensity producer of milk. The figures used suggest that New Zealand's emissions intensity for milk is four times higher than Israel's, behind Surinam and only slightly ahead of Uzbekistan. These figures are at odds with more rigorous quantitative research such as the report completed by Ag research in 2021 which places New Zealand producers as the most emissions-efficient producers.¹⁵
- 2.43** The use of these figures to assess the risks of emissions-leakage means that the corresponding analysis in the report significantly underestimates the dairy emissions leakage that would arise from the Government's pricing proposal.
- 2.44** In a global context, it is detrimental to shift food production from New Zealand to food producers elsewhere who are less efficient. New Zealand's most significant opportunity to contribute to global emissions is to help other countries become more efficient.

Impacts on Rural and Provincial Communities and Economies

- 2.45** The Document on pricing agricultural emissions goes into some detail about how agriculture itself is likely to be affected by the imposition of payments by farmers for the greenhouse gas emissions from their farms. But while it acknowledges that any direct effects on farming activity are likely to be associated with indirect effects on upstream and downstream industries (i.e. industries supplying and purchasing from agriculture), it says virtually nothing about what the distribution and magnitude of these indirect effects might be.
- 2.46** Similarly, while the consultation document acknowledges that there is the potential for pricing of agricultural emissions to result, amongst other things, in a reduction in employment and de-population in some rural communities, it shies away from exploring where and how large these community impacts might be.
- 2.47** Below is a presentation of the results of an analysis, designed to do what the consultation did not: illustrate statistically how pricing of agricultural emissions could have impacts on industries upstream and downstream of agriculture, and on the communities where they are located. The analysis focuses on the potential flow-on effects of changes in activity levels in sheep, beef and dairy farming.

Impacts on upstream and downstream industries

Upstream industries

- 2.48** The financial interactions between any industry in the economy, and the industries upstream and downstream from that industry, are described in the New Zealand Input-Output tables, produced by Statistics New Zealand. The tables show the sales and purchase relationships between 108 different industries, and latest version edition is for 2020.
- 2.49** Table 1 illustrates the extent to which key industries upstream of sheep, beef and dairy farming are dependent on sheep, beef and dairy farming for their sales. The first column of data in the table shows the share of the various industries total sales that are to sheep,

¹⁵ <https://www.dairynz.co.nz/media/5794083/mapping-the-carbon-footprint-of-milk-for-dairy-cows-report-updated.pdf>

beef and dairy farming, and it might be said that at least the first three upstream industries are critically dependent on sheep, beef and dairying. It follows that these three upstream industries listed would be hard hit by a reduction in sheep, beef and dairy farming activity, following the imposition of emissions charging. The seven other upstream industries would also be significantly affected, albeit to different extents.

2.50 The second column of data in Table 1 shows the dollar value of sales to sheep, beef and dairy farming by the top 10 most dependent upstream industries¹⁶. In combination, these 10 industries had sales worth \$5.6 billion to sheep, beef and dairy farming (slightly more to dairy farming than to sheep and beef), representing 55% of all purchases by sheep, beef and dairy farming from other New Zealand industries.

2.51 Another feature of the table is that it shows sheep, beef and dairy farming as having the largest sales to itself. This is mainly the result of inter-farm stock sales.

Table 1. Upstream industries most dependent on Sheep, beef and dairy farming for their sales

Upstream industry	Value of sales to sheep, beef and dairy as a share of the industry's total sales, %	Value of sales to sheep, beef and dairy farming, \$m
Fertiliser & pesticide manufacturing	46.2	636
Veterinary & other professional services	31.3	189
Agriculture, forestry, & fishing support services	29.5	1,404
Pharmaceutical, cleaning, & other chemical mfg	19.0	128
Poultry, deer, & other livestock farming	12.3	108
Basic material wholesaling	11.2	432
Building cleaning, pest control, & other support services	10.3	406
Other goods & commission-based wholesaling	10.2	331
Sheep, beef & dairy cattle farming	8.4	1,876
Pharmaceutical & other store-based retailing	8.1	59

Source: Statistics New Zealand, Input-output tables 2020 – inter-industry transactions

2.52 It should be noted that the data in the table above includes inputs into grain farming because the Input-Output tables combine grain farming with sheep, beef and dairy farming. However, based on the land area used, the sheep, beef and dairy farming industry is around 10 times the size of the grain farming industry. This implies that the exclusion of grain farming from the data would make relatively little qualitative difference to what table 1 shows.

Downstream industries

2.53 The first column of table 2 expresses the extent to which the 10 most dependent downstream industries¹⁷ rely on sheep, beef and dairy farming for their purchases. Unsurprisingly, it implies that the dairy and meat processing industries are overwhelmingly dependent on sheep, beef and dairy farming, and it follows that they

¹⁶ The input-output tables indicate that, in total, around 60 industries provide inputs into sheep, beef and dairy farming, but the dollar value of inputs from most of these is relatively small.

¹⁷ The input-output tables indicate that, in total, around 30 industries buy the outputs of sheep, beef and dairy farming, but that most of these have a very small dollar value.

would be very hard hit by a reduction in sheep, beef and dairy farming activity, following the imposition of emissions pricing.

2.54 The second column of data in the table shows the dollar value of purchases from sheep, beef and dairy farming by the 10 most dependent downstream industries. In combination, these 10 industries had purchases of \$22.2 billion from sheep, beef and dairy farming, representing virtually of all the purchases (99.5%) by other New Zealand industries from sheep, beef and dairy farming. In fact, the three largest purchasing industries accounted for 96.2% of all the purchases from sheep, beef and dairy farming.

Table 2. Downstream industries most dependent on Sheep, beef and dairy farming for their purchases

Downstream industry	Value of purchases from sheep, beef and dairy as a share of the industry's total purchases, %	Value of purchases from sheep, beef and dairy farming, \$m
Dairy product manufacturing	67.4	13,476
Meat & meat product manufacturing	59.5	6,071
Textile & leather manufacturing	28.8	285
Sheep, beef cattle, & grain farming	15.5	1,876
Poultry, deer, & other livestock farming	8.7	104
Fruit, oil, cereal, & other food product mfg	2.9	158
Horticulture & fruit growing	2.4	74
Agriculture, forestry, & fishing support services	2.1	58
Local government administration services	1.2	11
Beverage & tobacco product manufacturing	1.1	40

Source: Statistics New Zealand, Input-output tables 2020 – inter-industry transactions

2.55 The same caveats about grain farming as applied to table 1 also apply to table 2.

Effects on rural communities

2.56 The next two tables use 2020 employment counts from Statistics New Zealand. Table 3 simply presents national level employment counts in the 10 most dependent upstream and downstream industries identified in tables 1 and 2, respectively. Excluding sheep, beef and dairy farming itself, the national employment count in the most dependent upstream industries is 105,200, while the corresponding figure for the most dependent downstream industries is 178,240.

Table 3. Employment in the most dependent upstream and downstream industries

Upstream industries	Employment count
Sheep, beef cattle & dairy farming	44,500
Agriculture, forestry, & fishing support services	29,200
Other goods & commission based wholesaling	23,600
Basic material wholesaling	22,000
Pharmaceutical & other store based retailing	12,000
Poultry, deer, & other livestock farming	6,820
Veterinary & other professional services	5,900

Fertiliser & pesticide manufacturing	2,200
Pharmaceutical, cleaning, & other chemical manufacturing	2,200
Building cleaning, pest control, & other support services	1,300
Total upstream industries	149,720
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Downstream industries	Employment count
Sheep, beef cattle & dairy farming	44,500
Local government administration services	36,400
Meat & meat product manufacturing	31,900
Horticulture & fruit growing	30,900
Agriculture, forestry, fishing support services	29,200
Dairy product manufacturing	17,100
Beverage manufacturing	10,700
Textile & leather manufacturing	7,900
Fruit, oil, cereal, & other food product manufacturing	7,320
Poultry, deer, & other livestock farming	6,820
Total downstream industries	222,740

Source: Statistics New Zealand – Business Demography statistics

2.57 Table 4 presents estimates of the number of jobs in the upstream and downstream industries that could be vulnerable, following the introduction of agricultural emissions pricing. The numbers in the table are based on multiplying the employment counts for the most dependent upstream and downstream industries, from Table 3, by the corresponding sales and purchase shares from Tables 1 and 2. So, for example, Table 3 shows that there is an upstream and downstream employment count of 29,200 in Agriculture, forestry and fishing support services, while Table 1 shows that 29.5% of the sales from this industry are to Sheep, beef and dairy farming, while Table 2 shows that 2.1% of the purchases by this industry are from Sheep, beef and dairy farming.

2.58 It is emphasised that, in this context, ‘vulnerable’ means exposed to impacts from the introduction of pricing of agricultural emissions. The actual magnitude of the impacts will depend on exactly what pricing regime is implemented.

2.59 Table 4 implies that, excluding vulnerable employment in sheep, beef and dairy farming itself, vulnerable employment in the most dependent upstream industries totals 18,131 at national level. The corresponding total for the most dependent downstream industries is 36,476. Accordingly, 54,607 jobs nationally are vulnerable, if agricultural emissions become subject to pricing.

Table 4. Vulnerable employment in the most dependent upstream and downstream industries

Upstream industries	Employment count
Agriculture, forestry, and fishing support services	8,602
Sheep, beef cattle and dairy farming	3,738
Basic material wholesaling	2,457
Other goods and commission based wholesaling	2,410

Veterinary and other professional services	1,849
Fertiliser and pesticide manufacturing	1,015
Pharmaceutical and other store based retailing	974
Poultry, deer, and other livestock farming	270
Pharmaceutical, cleaning, and other chemical manufacturing	418
Building cleaning, pest control, and other support services	134
Total upstream industries	21,869
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Downstream industries	Employment count
Meat and meat product manufacturing	18,976
Dairy product manufacturing	11,518
Sheep, beef cattle and dairy farming	6,898
Textile and leather manufacturing	2,274
Horticulture and fruit growing	731
Agriculture, forestry, and fishing support services	627
Poultry, deer, and other livestock farming	596
Local government administration services	432
Fruit, oil, cereal, and other food product manufacturing	211
Beverage manufacturing	112
Total downstream industries	42,374

Source: Derived from tables 1 ,2 and 3

- 2.60** In combination, the three upstream and downstream industries that have the most vulnerable employment (i.e. Meat processing, Dairy processing, and Agriculture support services) account for almost three-quarters (72.7%) of all employment in vulnerable industries. Using Statistics New Zealand’s Business Demography data, it is possible to identify the Districts within New Zealand where the vulnerable employment is located. But it should be explained that, in order to simplify the calculations, only the various Districts’ employment in the national top three vulnerable upstream and downstream industries was used.
- 2.61** The districts with the largest shares of their total employment in the main vulnerable industries are shown in Table 5, and it will be noted that they tend to be the same Districts where sheep, beef and dairy farming are important. It should also be noted that the vulnerable employment shown in the table is over and above vulnerable on-farm employment in sheep, beef and dairy farming.
- 2.62** What the table implies is that some District economies could be devastated by a reduction in upstream and downstream activity, following the introduction of agricultural emissions pricing. Even worse, the devastation is likely to be concentrated on certain communities within the districts, especially where local meat works and/or dairy plants are closed. Rationalisation of capacity is likely, if farm output is reduced.
- 2.63** There are also likely to be job losses and business closures within the agriculture, forestry and fishing support services. Businesses in this industry are generally SMEs, because they include operations such as fencing, fertilising and shearing contractors.

Table 5. Districts where there is most vulnerable upstream and downstream employment

Territorial Authority area	Total employment count	Employment count in the key vulnerable industries	Share of total employment in vulnerable industries, %
South Taranaki	12,400	3,550	28.6
Southland	16,500	4,190	25.4
Clutha	8,800	2,130	24.2
Wairoa	3,250	770	23.7
Central Hawke's Bay	6,300	1,400	22.2
Matamata-Piako	15,500	3,320	21.4
Rangitikei	6,000	1,180	19.7
Waimate	2,700	530	19.6
Waitomo	4,800	920	19.2
Tararua	6,000	1,090	18.2
Western Bay of Plenty	17,300	3,116	18.0
Hurunui	5,300	840	15.8
Gore	6,600	1,030	15.6
Westland	4,400	685	15.6
Opotiki	3,400	520	15.3
Waitaki	10,400	1,580	15.2
Carterton	3,100	455	14.7
Timaru	24,400	3,040	12.5
Manawatu	9,500	1,183	12.5
Ashburton	17,300	2,112	12.2
Waikato	20,200	2,220	11.0

Adding the on-farm impacts

2.64 The employment numbers shown in Table 3-5 are only for the key upstream and downstream industries. Table 6 adds direct employment in sheep, beef and dairy farming to vulnerable employment in the upstream and downstream industries to provide a broader account of vulnerable employment. The table shows that there are 5 Districts where broader vulnerable employment is more than 40% of total employment in those Districts. It also identifies a further 6 Districts where broader vulnerable employment is greater than 30% of the District total, and a further 10 Districts where broader vulnerable employment is more than 20% of the District total. Many of the Districts shown are remote from large population centres, where there are alternative employment and business opportunities.

Table 6 Districts where there is **most vulnerable direct, upstream and downstream employment**
(21 Districts where the share of total employment in vulnerable industries is at least 20%)

Territorial Authority area	Total employment count	Employment count in the key vulnerable industries	Share of total employment in vulnerable industries, %
Southland	16,500	8,290	50.2
Waimate	2,700	1,320	48.9
Clutha	8,800	4,130	46.9
Wairoa	3,250	1,425	43.8
South Taranaki	12,400	5,250	42.3
Rangitikei	6,000	2,380	39.7
Central Hawke's Bay	6,300	2,360	37.5
Tararua	6,000	2,230	37.2
Waitomo	4,800	1,650	34.4
Hurunui	5,300	1,820	34.3
Matamata-Piako	15,500	4,750	30.6
Ashburton	17,300	4,780	27.6
Gore	6,600	1,720	26.1
Otorohanga	3,450	880	25.5
Waitaki	10,400	2,600	25.0
Carterton	3,100	735	23.7
Manawatu	9,500	2,133	22.5
Westland	4,400	980	22.3
Opotiki	3,400	735	21.6
Western Bay of Plenty	17,300	3,616	20.9
Kaipara	6,800	1,360	20.0

How large, and where, will the negative impacts actually be?

- 2.65** The magnitude of the negative impacts described above will depend on the effects that the introduction of agricultural emission pricing will have on activity levels and revenues within sheep, beef and dairy farming. Modelling results shown in the consultation document on pricing agricultural emissions indicates that net revenues in the dairy farming sector could drop by 6-7%, while net revenues in the sheep and beef sector could drop by between 18% and 24%.
- 2.66** These results imply that the negative impacts will be concentrated in the upstream and downstream industries that are more orientated towards sheep and beef farming, than towards dairy farming. They also imply that harms at community level will be felt much more in the districts where meat product and meat manufacturing is located. The actual geographical distribution of the likely harms is, however, unpredictable. There are currently 40 or so meat works in New Zealand, and it seems inevitable that some will close, if sheep and beef farming contracts to the extent indicated in the consultation document.
- 2.67** Moreover, reductions in on-farm employment and in the important upstream and downstream industries are likely to be multiplied throughout the communities, as aggregate incomes drop. Important community service activities, such as schooling,

healthcare and retailing, could become unsustainable, and it is not hyperbole to claim that whole communities could become unviable through employment and population loss.

2.68 Put bluntly, some communities will be devastated by the introduction of pricing agricultural emissions.

2.69 It is also unlikely that the magnitude of the negative impacts on the upstream and downstream industries will be directly proportional to the reduction in net farm revenues, following the introduction of agricultural emissions pricing. If the surviving farms were to reduce their purchases from upstream industries, the negative upstream impacts would be more-than-proportional. However, they could conceivably be less-than-proportional, if it were possible for the surviving farms to reduce their costs by outsourcing more on-farm tasks.

Offsetting impacts

2.70 Lastly, it is appropriate to acknowledge that there would be some offsetting gains, following the introduction of emissions pricing. The consultation document suggests that these gains would arise from the adoption of alternative new land uses, such as forestry, arable farming and horticulture, which would have their own upstream and downstream effects. Of the possible alternative land uses, forestry seems the most likely, given that farm net revenue losses consequent to emissions pricing are more likely to occur in sheep and beef farming than in dairy farming.

2.71 However, whether the alternative land uses will fully compensate for the economic losses from a reduction in sheep, beef and dairy farming activity is uncertain. What is less uncertain is that changes to land use will, at best, be highly disruptive to the affected communities.

Conclusions

2.72 Noting that some communities will be devastated by the introduction of pricing agricultural emissions, it will be important to ensure that there is a strong policy response to mitigate the harms that will be experienced. Relying on offsetting impacts associated with alternative land uses, and the hope that remaining sheep and beef exports will attract premium prices on world markets, is unlikely to secure a just transition for the communities affected.

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ANNEX 1.

ABOUT BUSINESS NEW ZEALAND

[BusinessNZ](#) is New Zealand's largest business advocacy body, representing:

- Regional business groups [EMA](#), [Business Central](#), [Canterbury Employers' Chamber of Commerce](#), and [Employers Otago Southland](#)
- [Major Companies Group](#) of New Zealand's largest businesses
- [Gold Group](#) of medium sized businesses
- [Affiliated Industries Group](#) of national industry associations
- [ExportNZ](#) representing New Zealand exporting enterprises
- [ManufacturingNZ](#) representing New Zealand manufacturing enterprises
- [Sustainable Business Council](#) of enterprises leading sustainable business practice
- [BusinessNZ Energy Council](#) of enterprises leading sustainable energy production and use
- [Buy NZ Made](#) representing producers, retailers and consumers of New Zealand-made goods

BusinessNZ is able to tap into the views of over 76,000 employers and businesses, ranging from the smallest to the largest and reflecting the make-up of the New Zealand economy.

In addition to advocacy and services for enterprise, BusinessNZ contributes to Government, tripartite working parties and international bodies including the International Labour Organisation ([ILO](#)), the International Organisation of Employers ([IOE](#)) and the Business and Industry Advisory Council ([BIAC](#)) to the Organisation for Economic Cooperation and Development ([OECD](#)).

ABOUT EXPORT NEW ZEALAND

ExportNZ is a national industry association representing a diverse range of exporters throughout New Zealand. ExportNZ is a division of BusinessNZ, New Zealand's peak business advocacy body.

We are a membership organisation and across our two brands have approximately 2,000 export members. We also have four regional partners: Employers Manufacturers Association (Upper North Island), Business Central (Lower North Island), Canterbury Employers Chamber of Commerce (Upper South Island) and Otago Southland Employers Association (Lower South Island) which between them represents the bulk of manufacturers in New Zealand.

Our value proposition for members is a mixture of policy and advocacy, education and training, networking, trade missions and inspiration through awards events and conferences. Notably, we run a BusinessNZ Chief Technology Officers Group, incorporating the largest innovation-driven companies in New Zealand, many of which export.

