

INTEGRATING VALUE CHAINS TO REWARD SUSTAINABLE LAND USE PRACTICES

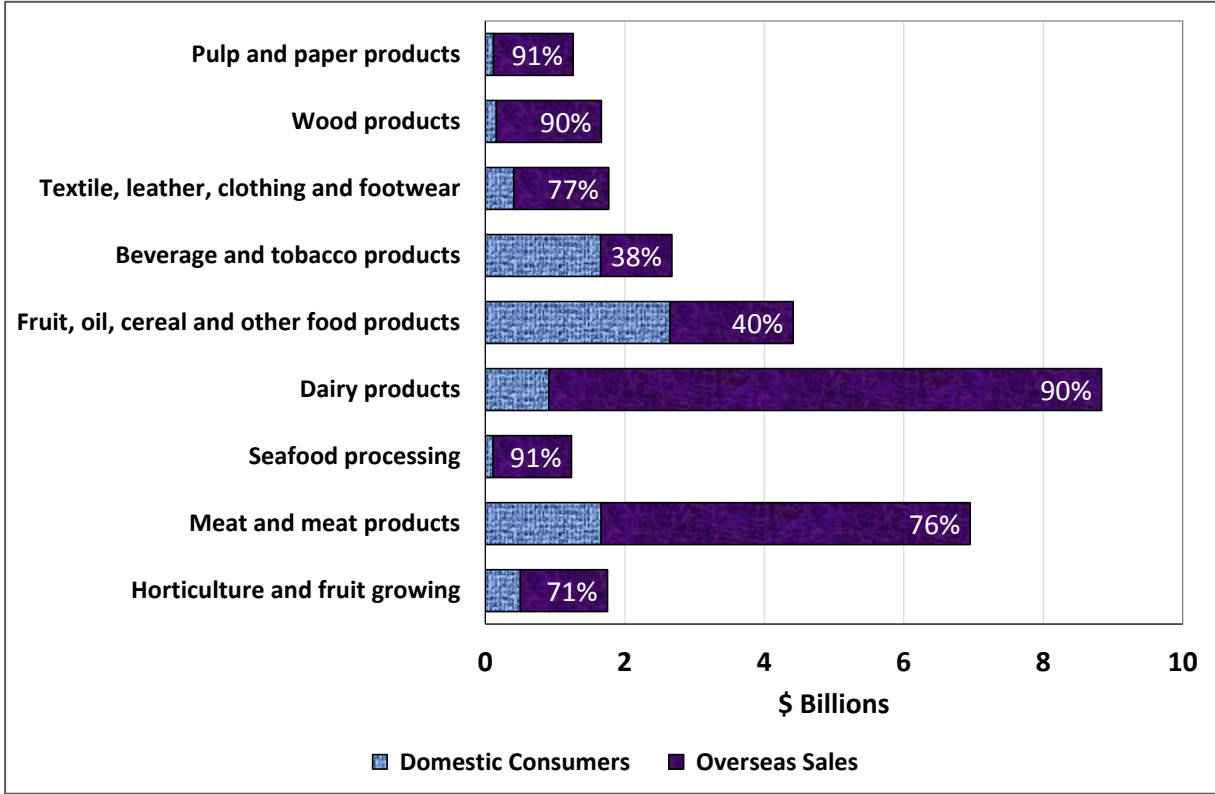
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Introduction

An unusual feature of the New Zealand economy compared to other developed countries is that it has a relatively low ratio of exports to gross domestic product, but the percentage of merchandise exports devoted to agri-food products is very high (Dalziel *et al*, 2017). Indeed, the country’s primary production is focused on exports. This is shown in Figure 1, which depicts the share of final sales that is exported for the major agri-food industries in New Zealand; with two exceptions, the share is more than 70 per cent, rising to 90 per cent for dairy products. Consequently, global agri-food value chains are very important for New Zealand’s economic wellbeing.

Figure 1: Value of New Zealand Agri-Food Final Sales and Share that is Exported, 2006/07



Source: Saunders *et al*. (2016, page 20), based on Statistics New Zealand (2012).

Science-led innovation has contributed to strong growth in the sector's productivity (Hall and Scobie, 2006), but it is recognised that “the continued development and intensification of agriculture [is] pushing up against environmental constraints” (Rolleston, 2015). This has led the government to fund a large-scale National Science Challenge named *Our Land and Water*, which aims “to enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations” (Joyce, 2013; see also www.ourlandandwater.nz/). The science in this Challenge is organised around four themes:

- Theme 1: Greater value in global markets
- Theme 2: Innovative and resilient land and water use
- Theme 3: Collaborative capacity
- The Nexus: Strategy, leadership, coordination and integration

This paper introduces Theme 1. The research in the theme is based on the observation that the farming sector generally performs very strongly in terms of delivering attributes such as animal welfare, environmental stewardship, social responsibility and cultural authenticity (although with the possibility of improvements being researched in Theme 2 and Theme 3), but these qualities are not always communicated well to overseas consumers. Consequently, it is hypothesised that New Zealand producers are not realising all of the value available for our exports in the market, in some cases because any additional value is captured by others in the value chain. Hence Theme 1 is commissioning scientific research to test this hypothesis and address opportunities for creating and capturing greater value from our land and water.

Two Completed Projects

Theme 1 has already completed two research projects. The first project produced a report on the international and national drivers of land use choices (Saunders *et al*, 2017a). This project aimed to develop a comprehensive database on “drivers” (from overseas and from domestic sources) that have an impact on the way we use land and water in New Zealand. The research also ranked these drivers by importance. This report is being used to help prioritise areas where further research are likely to deliver the most impact.

The second project produced a white paper on how value chains can better share value (economic, environmental, social and cultural) from consumer to producer and incentivise land use practices that relieve tensions between national and international drivers (Saunders *et al*, 2017b). This involved a review of the high impact scientific literature, and an application in the context of New Zealand export value chains to explore the ability of value chains to share value. Because the focus was on value chains from consumer to producer, the review concentrated on market oriented value chains. Because the focus was on shared value, the emphasis was on collaborative value chains. The research provided insights into the characteristics of “good” market oriented value chains for delivering value that incentivises sustainable land use practices and how these characteristics might be relevant for collaborative value chains for New Zealand's key export products from its land and freshwater resources.

The central hypothesis tested in the white paper was the following: The more collaborative a value chain is, the greater is the value that New Zealand producers, processors and manufacturers in the land and water sector can capture from profiling the desirable ‘credence attributes’ of its production systems (‘the New Zealand story’), targeted at consumer segments. It presented strong evidence in the international literature for the validity of that hypothesis and described some specific science challenges that could be addressed with high quality research under five headings:

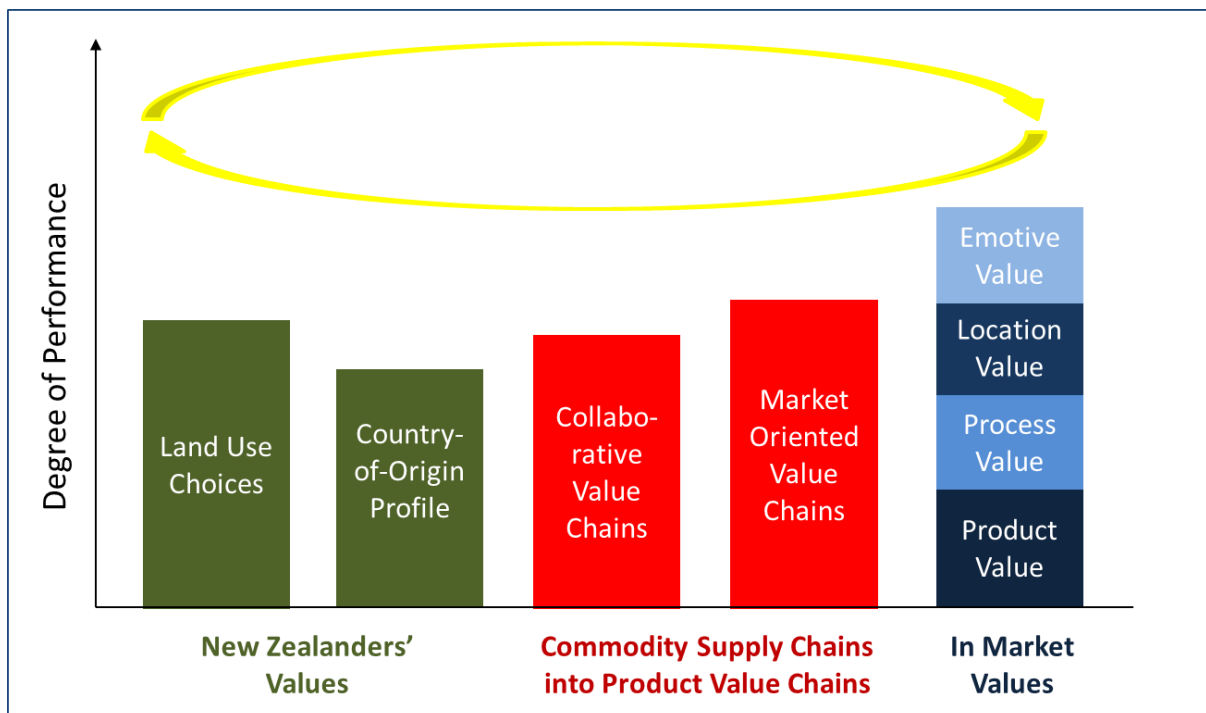
- Value to Consumers and Credence Attributes
- Market Oriented Value Chains and Communication
- Collaborative Value Chains and Governance
- Country-of-Origin Profile
- Land Use Choices

These elements are represented in Figure 2, showing how collaborative and market oriented value chains connect New Zealanders' values (reflected in land-use choices and the country's international profile) and the value to consumers in international markets. The report distinguished four sources of value to consumers:

- **Product Value** Traditional attributes such as taste, texture, appearance, etc.
- **Process Value** Credence attributes such as environmental stewardship, animal welfare, etc.
- **Location Value** Ambiance of where the product is consumed or purchased, and how it got there.
- **Emotive Value** Overall response to the consumption experience and associated narrative.

The white paper concluded that a mission-led scientific research programme would deliver the strongest outcomes if it integrated some or all of the above elements. This would ensure that all contributions to value could be addressed.

Figure 2: Stylised Performance of Agribusiness Value Chains



Source: Saunders *et al.* (2017b, page 45).

Conclusion

The two completed projects were important steps towards developing the larger research programme for Theme 1 of the Challenge. The white paper, for example, fed directly into a workshop of key stakeholders hosted by the Challenge Directorate on 29 September 2016. This led to further research being commissioned from a team of scientists from five public sector organisations and four private sector organisations to address specific hypotheses designed from the framework in Figure 2 above. This is one of four new projects currently under way within Theme 1 of the *Our Land and Water* National Science Challenge. The four projects are:

1. Integrating value chains, led by the AERU at Lincoln University.
2. OLW Indicators, led by PwC New Zealand.
3. Bioeconomy think piece, led by SCION.
4. Eutrophication footprinting, led by AgResearch.

Results will be published on the *Our Land and Water* website, www.ourlandandwater.nz/. Successful research in these projects will create greater value and increase returns to primary producers. Increased returns in collaborative value chains will improve industry, regional and national wealth. This objective also links to research in Theme 3 of the *Our Land and Water* Challenge, which is producing new knowledge on how collaboration can lead to robust, enduring and proven decision-making in catchments.

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