



Understanding the influence of indigenous values on change in the dairy industry

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Abstract

Communities, scientists, policy-makers and industries are requiring farmers to address environmental and wellbeing challenges in their on-farm management, transitioning away from a productivity dominated focus towards a multi-faceted system focus that includes environmental and social values. This paper analyses how Miraka Ltd., an Aotearoa-New Zealand indigenous owned and operated milk company, has taken on the role of institutional entrepreneur to enable and support change towards a multi-faceted system amongst its supply farmers. Observations and interviews were carried out to: (i) identify farmers' changes in practices, beliefs and values over the last ten years; and (ii) identify how Miraka functions as an indigenous entrepreneur in the agricultural sector. Findings show that interviewees were initially guided by business and family-oriented values, beliefs and practices, but in response to the institutional entrepreneurship by Miraka, approximately half of the interviewees changed these values, beliefs and practices, by internalising people and environmental values. The main strategies employed by Miraka were mobilisation of material resources such as incentives and awards, creation of a rationale addressing environmental and social concerns in the dairy sector, and proactive connection with new actors. The research shows an indigenous owned small-medium enterprise can make changes in values, beliefs and practices amongst its supply farmers, but requires a stronger shared base of values to contribute to a wider economic change. The discussion connects these findings to wider literature on diverse economies and indigenous entrepreneurship to identify to what extent an indigenous small-medium enterprise can contribute to a system change.

Keywords Institutional change · Institutional entrepreneurship · Indigenous values · Agriculture · Environmental change

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Abbreviations

Aotearoa	Aotearoa-New Zealand
CEO	Chief Executive Officer
Miraka	Miraka Ltd.; an Aotearoa-New Zealand indigenous owned and operated milk company. The word 'Miraka' also means 'Milk' in Te Reo Māori.
SME	Small medium enterprise
Te Ara Miraka	Te Ara Miraka programme; Miraka's farmer excellence programme

Introduction

The agricultural sector in Australasia is facing several challenges including the need to address greenhouse gas emissions (IPCC 2022), surface and groundwater pollution (Scarsbrook and Melland 2015) and biodiversity decline (Moller et al. 2008). Additionally, in countries with low regulatory intervention in the agricultural sector,

such as Aotearoa-New Zealand (from here on referred to as ‘Aotearoa’), coping with the social pressure to make change at the farm level presents an additional challenge (Edwards et al. 2019; Knook et al. 2022). The pressure to change is leading to an increasing interest in alternative types of systems, which require a move from a focus solely on productivity to a multi-faceted focus including environmental and social considerations (Knook and Turner 2020). This suggests a move is required from a traditional system, in which the focus is predominantly on monetary values, towards a system in which there is space for alternative systems, which include other values such as environment and culture (Gibson-Graham 2008). Indigenous small-medium enterprises (SMEs) might be able to contribute to such a change, by contributing to a new economic reality based on alternative value and belief systems via bottom-up entrepreneurship (Amoamo et al. 2018).

If we look at the profession of farming, we see that there is currently a dominant set of existing practices, beliefs, and values, that constitute ‘good farming’ (Burton 2004; McGuire et al. 2013). Over the last two centuries, the farming profession in Aotearoa has developed within the classical Western idea of development, i.e. a system in which ‘development’ is predominantly expressed and measured on financial levels (Rosin 2013). This has led to a dominant focus on the values of productivity and profitability (Knook and Turner 2020). Practices have been developed that are believed to maximise this productivity and profitability, such as high stocking rates and high fertiliser use. From this perspective, other aspects, such as protecting the environment and promoting culture, are seen as a cost to the system, which compromises productivity and profitability.

Changing the values, beliefs and practices underlying the farming profession, and thereby contributing to the creation of an alternative system, can be achieved via institutional entrepreneurship (Hardy and Maguire 2017). Previous research into change in the agricultural sector has shown several forms of this. For example, extension programmes can function as change actors (Knook et al. 2020b; Knook and Turner 2020). Furthermore, policy and advice are also seen as important drivers for change (Beers et al. 2014; Prager et al. 2016). Moreover, processing companies have been involved in setting guidelines around water quality practices that have led to change (e.g. Ministry for Primary Industries 2013; Tall and Campbell 2018). However, there has been no focus on how SMEs can contribute to change. Furthermore, previous research has focused on institutional entrepreneurship within an existing traditional economic system, without a specific focus on indigenous entrepreneurship. This indicates a need to study how indigenous forms of entrepreneurship by SMEs can contribute to the development of alternative systems.

To increase understanding of the role indigenous entrepreneurship plays in changing to alternative systems, we focus on an Aotearoa milk processing company: Miraka Ltd. This case study was selected because first, this SME functions in the dairy sector, which is the largest export earner for Aotearoa (NZ Institute of Economic Research 2018). In the current economy, the sector has been characterised by major development over the last three decades and has significant value to Aotearoa from a financial perspective. However, the growth of the sector has led to deterioration in environmental conditions and to challenges in farmer well-being (Tall and Campbell 2018), which highlights a need to move towards an alternative system inclusive of environmental and wellbeing aspects. Second, Miraka is owned by a group of Māori (the indigenous people of Aotearoa) trusts and corporations. The company is based on traditional Māori culture, which is inherently different to the historically dominant farming culture focused on maximising productivity. This creates an ideal opportunity to better understand how an indigenous SME, such as Miraka, operates and uses its resources to change values, beliefs, and practices, which, ultimately, contribute to the development of an alternative system.

This study aims to provide an answer to the following three questions: (i) what are the dominant practices, beliefs, and values, that constitute the profession of farming for Miraka supply farmers?; (ii) how have these practices, beliefs, and values changed since suppliers joined Miraka?; (iii) how has Miraka functioned as an institutional entrepreneur in this change? Contributions of this study are twofold. First, the study contributes to current literature by expanding knowledge on change in the agricultural sector by studying strategies of indigenous institutional entrepreneurship. Second, the study will build knowledge that will not only inform policy-making regarding mechanisms of change, but also builds understanding into Māori/indigenous agribusinesses.

Conceptual framework

A change towards ‘alternative systems’

Due to the absence of systematic inclusion of environmental, social, and cultural aspects in the profession of farming, there is a need to move from a focus solely on productivity to a multi-faceted focus including environmental and social considerations. This would be an alternative to Aotearoa’s current ‘good farming’, in which success is mostly expressed and communicated on productivity and profitability levels (Brooking and Pawson 2010; Rosin 2013).

Research has been conducted internationally around the creation of ‘alternative systems’, although not specifically focused on the profession of farming. For example,

an alternative system around territorial sovereignty was achieved in Bolivia by the indigenous population, via conducting continuous negotiations with the Government (Postero and Fabricant 2019). In Ecuador and Bolivia space for these Governmental negotiations was created by ‘Buen Vivir’; a legislation that allows the creation of an alternative to classical development strategies (Gudynas 2011). This indicates that although creating an alternative system is possible, it requires bottom-up change as well as space within the legislation underlying the current classical Western development system.

In Aotearoa, ‘diverse economies’ is used as a terminology to refer to several systems to exist alongside each other. Under the concept of diverse economies conscious and combined efforts, such as institutional entrepreneurship, can contribute to building a new economic reality (Gibson-Graham 2008). This reality can for example be built by SMEs, which can contribute to the integration of new practices that are currently largely ignored by mainstream economic thinking (Amoamo et al. 2018). Although not in the form of ‘Buen Vivir’, Aotearoa finds itself in the process of a social and political experiment, in which exploration and debates occur as to how Māori values and principles can exist in the face of a dominant Western economy. It is thus interesting to explore how bottom-up initiative from a small SME can contribute to an alternative system.

Institutional entrepreneurship

This study focuses on developing an alternative system, by looking at how indigenous entrepreneurship can initiate bottom-up change that might filter through on a national economic level. The concept of ‘institutional entrepreneurship’ has been studied extensively in organisational studies and is placed under the theoretical umbrella of ‘institutional theory’ (Greenwood et al. 2017). Institutional entrepreneurship refers to the “activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones” (Maguire et al. 2004, p. 657).

To ensure change, institutional entrepreneurs need to introduce new values, beliefs and practices and ensure these are adopted by the actors in the field (Hardy and Maguire 2017). In the literature, there are three strategic areas identified via which entrepreneurs establish this change. First, mobilisation of material resources is needed to negotiate support for the proposed changes (Lawrence and Suddaby 2006). An example of material resources made available are prizes for best practices (Monteiro and Nicolini 2015). Second, arguments for change need to be constructed, via institutional entrepreneurs communicating reasons for actors to support or engage in the change process (Hardy and Maguire 2017). One way of doing so is by providing

solutions for problems associated with existing practices (Greenwood et al. 2002; Monteiro and Nicolini 2015). Third, actors can be (re)connected to achieve change (Mars and Schau 2017). This connection, especially between actors with different values, beliefs and practices, might lead to knowledge exchange and consequently to the development of new values, beliefs and practices (Getz and Warner 2006; Greenwood et al. 2011).

However, most of the literature outlining strategies of institutional entrepreneurship are based on investigating strategies in Western industrialised countries and aim for change within the same economic system. This leads to the question how might these Western industrialised strategies parallel strategies from indigenous cultures in working towards a system of diverse economies? Peredo et al. (2004) suggest successful indigenous entrepreneurship is characterised by: (i) being conducted by individuals who are closely attached to ancestral territories and the natural resources in them; (ii) a close connection to community based economic development; and (iii) looking beyond economic success factors, by linking success to broader social and political factors. As indigenous entrepreneurship is still an emerging field of research (Dana 2015), it requires further study into where indigenous entrepreneurship strategies are similar or different compared to strategies highlighted in the institutional entrepreneurship literature. Furthermore, it requires further study into whether or where indigenous SMEs can contribute to a change in the traditional Western development systems.

Aotearoa-New Zealand, the dairy industry and Miraka

Aotearoa-New Zealand and the Māori economy

Aotearoa-New Zealand (Aotearoa) has a shorter human history than most other countries. The first people arrived from Polynesia and settled in Aotearoa approximately 1000–1500 years ago, followed by European (Pākehā) settlement in the late eighteenth century. In 1840 the founding document of Aotearoa, Te Tiriti o Waitangi (the Treaty of Waitangi), was signed by the British Crown and several Māori chiefs. In the years following the signing of Te Tiriti, the population balance shifted significantly from Māori towards Pākehā settlers. The economic and political climate followed the principles of what Tau and Rout (2018) refer to as ‘settler colonialism’. Under this settler colonialism, which has also been observed amongst indigenous populations in other countries such as Australia and the United States, Western law was introduced to create permanent economic and political structures that specifically suited settlers (Morgensen 2011; Wolfe

2006). Banner (2000) explains this as the Māori ‘being conquered by contract’. The introduction of the dominant Western economic and political rational was designed to suit the settlers, by for example the creation of laws that forced Māori land sales at a low price (Orange 2013). As Tau and Rout (2018) outline in their paper, the permanent structures introduced under settler colonialism have had a major influence on the traditional ‘Māori economy’. Nevertheless, this economy, as part of the wider Aotearoa economy, is estimated at NZ\$50 billion in 2017 (Chapman-Tripp 2017). The modern Māori economy is described as dynamic, deep-rooted and complex and finds itself in an ever-evolving space, by aiming to incorporate intergenerational wealth, maintenance of cultural identity and wellbeing of the (sub)tribe (iwi and hapū) and family (whānau) (Amoamo et al. 2018; Barr and Reid 2014). One main criticism of the concept of the Māori economy, is that although useful to highlight the contribution of Māori to Aotearoa’s economy, it does not manage to capture the diversity and complexity of how Māori participate and make sense of economic activity (Amoamo et al. 2018; Tau and Rout 2018). The Māori economy is made up of more than just performance against dollars and cents. Hence, indigenous entrepreneurship might be able to help to create a different type of systems which, similar to the concept of ‘diverse economies,’ occurs alongside the existing Pākehā system and creates an economic space in which Māori recognise their values, beliefs and practices (Amoamo et al. 2018).

The Aotearoa-New Zealand dairy sector

Dairy farming is the largest export earner for Aotearoa, with a \$NZD 19.1 billion revenue from exports. During the last three decades the sector has experienced significant development based on economic indicators: the sector accounted for approximately 30% of Aotearoa’s merchandise exports in 2021 (Stats NZ 2022). The traditional dairy farming approach has developed because of a progression towards intensive dairying practices (Foote et al. 2015), which have subsequently led to environmental challenges (Knook et al. 2020a). Aotearoa is a country with ‘light-touch’ regulation in the agricultural sector; the Producer Support Estimate, also known as the gross monetary transfers taxpayers make to agricultural producers, is approximately 0.5%, compared to 20% in EU countries (OECD 2019). Most efforts to promote good management practices rely on voluntary participation by farmers. This means that to achieve different values, beliefs, and practices in the profession of farming the sector itself, through voluntary levy-funded organisations and processing companies, must engage with and interact with farmers directly.

The milk processing company: Miraka

Indigenous SMEs are often overlooked in the study of Aotearoa businesses and there is a need to study how they are organised, how their resources are used and how they might contribute to alternative systems (Amoamo et al. 2018). This study focuses on Miraka, a SME in the dairy sector. Miraka Ltd (referred to as ‘Miraka’) is a Māori-owned dairy processing company located in Aotearoa’s central North Island. It has 104 supply farmers. Although Miraka is founded on a Māori worldview, not all its staff and supply farmers are Māori. Approximately 40% of the farmers are Māori, while 60% are non-Māori (Pākehā). These Pākehā farmers have had limited interaction with Māori values prior to supplying Miraka and are thus introduced to a completely new worldview. We therefore focus on this Pākehā group of farmers in this study.

Miraka has an intergenerational view of business which is led by two key Māori cultural concepts: kaitiakitanga and tikanga (Miraka Ltd. 2021). Kaitiakitanga acknowledges that humans are all ‘naturally related’ to each other, to the land and water, and to the birds, animals, and trees. Miraka has set an approach in business design and decision-making that recognises an impact on one aspect of the environment has a flow-on effect on all the other aspects of the environment. As a business value Miraka has set itself the responsibility to recognise those connections and nurture their natural resources and people for a prosperous future. Tikanga acknowledges the concept of natural balance between humankind, land, water, and the birds, animals and trees. Miraka has defined its role as finding that balance between all those aspects based on practices of connection (hononga), respect (whakaute), and unity (kotahitanga). Tikanga is about balancing multiple values and perspectives and doing the right thing, at the right time, and for the right reason. Miraka’s aim, therefore, is to lead the way in terms of shifting from a purely profit-driven model to incorporate a wider range of values in the thinking and behaviour of its supply farmers. The changes it has introduced have a single goal in mind—manaaki whenua—uplifting and sustaining the status, dignity, and importance of the land. This places a strong focus on the actions of their supply farmers, including their farm systems, their natural environments, and their local communities.

One of the main ways Miraka expresses their values to their farmers is via their ‘Te Ara Miraka’ farming excellence programme. This programme communicates the key concepts of kaitiakitanga and tikanga to farmers via five pou (foundational posts): ngā tāngata (the people); te taiao (the environment); ngā kau (cows); miraka (milk); and taurikura (prosperity). To communicate importance of those five pou, review standards and associated best practices have been established for the Miraka farmers. Farmers are assessed

annually against these standards, which consist of two levels. Level 1 contains the mandatory standards, which every Miraka farmer is required to comply with. Level 2 consists of a set of additional standards, which can lead to a premium milk payment (financial incentive). Every farmer can achieve a score between 0 and 100 resulting in an additional payment between 0 and 20 cents on top of the annual seasonal milk price.

A main difference between Miraka¹ and Aotearoa's main dairy processor, Fonterra,² is the business model. Fonterra has a co-operative model, in which farmers who want to supply Fonterra must buy shares into the company and thereby become an owner in the company. The average size of an Aotearoa dairy herd is 440 cows (DairyNZ and LIC 2020), which means that in order to be able to supply milk to Fonterra, an average farmer needs to be able to invest between NZ \$ 500,000 and 1,000,000 in shares before milk is collected. Miraka has a different business model. It is owned collectively by a group of Māori trusts and corporations (Miraka Ltd. 2019) and contracts farmers for the supply of their milk. This means that farmers do not need to invest an initial NZ\$ 500,000 to 1,000,000, but can directly supply milk to Miraka. This represents an advantage to some farmers, as supplying milk to the processing company does not require any initial capital outlay (the buying of shares).

Methods

Data collection

To ensure a rich accumulation of data to draw inferences from, we obtained information from multiple resources, including in-depth interviews and participant observations. The first author conducted the interviews and participant observations between March and April 2021. The interviews and observations were built around the values, beliefs and practices of both Miraka and the farmers, the change in these values, beliefs and practices farmers had made since supplying Miraka, and the institutional entrepreneurship demonstrated by Miraka.

¹ Miraka has a similar financial model to other smaller processing companies in Aotearoa, such as Synlait (<https://www.synlait.com>) and Open Country Dairy (<https://www.opencountry.co.nz/>).

² Fonterra Co-operative Group Limited is the largest Aotearoa milk processing company. The dairy co-operative is collectively owned by approximately 10,500 farmers, who all own shares equal to (at least) the amount of milk solids they produce <https://www.fonterra.com/nz/en.html>.

Table 1 Overview of the interviewees

Interview	Number of interviewees	Position	Duration of supplying Miraka (years)
1	1	Owner-operator	6
2	4	Owners and managers	10
3	1	Owner-operator	2
4	2	Owner-operators	9
5	1	Owner-operator	2
6	2	Owner-operators	6
7	2	Owner and manager	9
8	2	Owner-operators	4
9	1	Owner-operator	10
10	1	Owner-operator	4
11	1	Owner-operator	7
12	1	Owner-operator	10

Observations

Observations were conducted during a three-day visit to the Miraka head office. These observations focused on individual actors, which provided detailed insight into their work (Jarzabkowski et al. 2009; Kellogg 2009). The observations were unstructured and did not entail the use of an observation schedule (Bryman 2012). It included for example conversations with four key actors of the milk supply team, as well as the chief executive officer and general manager innovation. These observations aimed to develop a narrative account of the behaviour and values of Miraka as a business. Conversations were recorded as detailed field notes and were used to: (i) increase understanding in the farming context in Aotearoa's central North Island; (ii) increase understanding in Miraka as an organisation; (iii) inform the questions to be asked during the farmer interviewees; and (iv) select a representative sample of interviewees to answer our main questions. Conversations with the members of the supply team were continued during the period of data collection, to for example get clarification about aspects of the Te Ara Miraka programme.

Interviews

Twelve qualitative interviews were conducted with Pākehā (non-Māori) Miraka farmers (Table 1). In several situations the farm was managed by more than one person, therefore the total number of interviewees was 19. To ensure data saturation, by capturing and understanding the practices, beliefs, and values of Pākehā farmers, interviewees were selected with the help of Miraka's milk supply team. This selection accounted for the differing period farmers had been supplying to Miraka (between 1 and 10 years).

Each interview lasted between 60 and 90 min, was audio-recorded and completely transcribed. The method of oral history interviewing was used, in which the interviewee was asked to reflect upon a specific period in the past (Bryman 2012) to gain insight into the values, beliefs and practices of farming and how these had changed during the period of supplying to Miraka. A maximum period of 10 years was chosen, because at the time of data collection Miraka had existed for 10 years. The period was adapted based on the amount of time a farm had been supplying to Miraka. If the respondent mentioned any changes, a follow-up question was asked to elaborate on the motivation for this change. Hence, follow-up questions depended on the interviewee's response and emerged based on the changes made. To gain insight into how Miraka contributed to possible change, extra questions were asked regarding the changes they indicated they had made due to supplying Miraka. The interview guide can be found in the "Appendix".

Data analysis

To develop robust theory that is empirically grounded we applied the principles underlying analytic induction, because this approach allows going back and forth between the data and theory by applying multiple rounds of coding the data (Manning 1982). The analytic induction consisted of the following steps. First, a round of coding was conducted to identify statements around the historical and current values, beliefs and practices the interviewees adhere to. After this, another round of coding was undertaken, in which we specifically focused on the current values, beliefs and practices. We used the five pou of the Te Ara Miraka programme, as the interviewees were introduced to these when they started supplying Miraka, and in a second round of coding, identified the presence of these in their current values, beliefs, and practices. Second, as we identified the level of change before and after based on the conceptual framework around institutional entrepreneurship, we identified statements related to strategies used to achieve change. This led us to present a framework of change including the strategies responsible for it. The interviews were coded into those broad categories using content analysis software NVivo 12 (QSR International Pty Ltd 2018).

Ethical considerations

The research was conducted after approval from the Lincoln University Ethics Committee. Ethical considerations in this research included: (i) avoiding unexpectedly approaching participants, which was overcome by having the Miraka supply team approaching interviewees; (ii) preparing interviewees by sending the questions one week beforehand; (iii) addressing cultural perspectives

by assuring the researcher conducting the interviews had extensive experience interviewing Aotearoa farmers and the research project was guided by a Māori co-author; and (iv) assuring confidentiality by signing an informed consent form outlining the above-mentioned points.

Findings

Before joining Miraka: the farming values

Before joining Miraka, most interviewees predominantly adhered to *business* and *family* values. The main motivation for the interviewees to join Miraka was a business decision: to free up capital. Participants from 10 out of 12 interviews supplied to a different processing company (Fonterra) before joining Miraka, while in two interviews Miraka was their first processing company. For supplying Fonterra, interviewees needed to invest in shares. However, when changing their supply activities to Miraka, they were able to sell these shares.

The only reason we went from Fonterra, really, to Miraka was just to cash up shares and then put that money somewhere else, really; that was the motivation back then.—interview 5

Further analysis on the underlying motivations to free up capital showed *family* values. In interview 3 for example, it was highlighted that the freed-up capital was used to enable a succession plan. The interviewee indicated that dividing farm assets between multiple family members, while maintaining farm profitability is challenging. Cashing up shares made financial means available to plan succession with equal distribution of assets amongst the family, while being able to continue running the farm.

I guess that succession side of things is always a tricky proposition in terms of it's not a huge pie and you start kind of dividing it into different sides of family – you've got to be pretty efficient and forethought about how that's going to work. [...] So, that side of it helped, just free up shares to make that transition a bit more seamless as such.—interview 3

Interviewees were also asked why they did not join a different processing company; two other processing companies also collect milk in the area. Interviewees indicated that, first, these other companies were not active 10 years ago (when approximately half of the interviewees joined Miraka). Second, these processors were looking for milk provisions at different times of the year, which did not fit the interviewees' herds or climate.

A new set of values: the five pou

As a response to the institutional entrepreneurship by Miraka, approximately half of the interviewees changed their values, beliefs and practices. First though, all interviewees continued to place a high importance on *business* values, in which they included the pou of taurikura (prosperity), Miraka (milk) and kau (cows/animal welfare). Interviewees indicated the importance of prosperity by talking about the score of the Te Ara Miraka programme, to obtain a 20 cent top up on the basic milk price.

Obviously everybody is striving for [scoring 100 points in the Te Ara Miraka programme], and that's what you want. And part of that is the 20 cents. – interview 2

These financial values were also strongly linked to Miraka (milk). To be able to be financially successful, interviewees indicated the importance of delivering a high-quality product, which was achieved by running an efficient business, with reducing the possibility of mistakes in milk production as much as possible. The same was visible for the pou 'ngā kau' (cows). Animal welfare was considered as highly important for the farmers, but again mostly to be able to efficiently deliver a high-quality product, with reducing losses to a minimum.

We've got two kilometres of river that we fenced off [...], mainly because we don't want stock falling into the river and losing stock. The wetlands are partly for duck shooting, but also they are too wet to graze and you just muck it up. – interview 4

Hence, the business values the interviewees initially had appear to remain. However, due to the Te Ara Miraka programme, participants linked business values more strongly to the three pou of taurikura, Miraka and kau, than before working with this programme. The quote from interview 4, also introduces 'te taiao' (the environment). Although this interviewee did not mention the environment as a focus area specifically, it was mentioned as a key value in on-farm decision-making by approximately half of the interviewees. For example, interviewee 8 indicated that being part of Miraka increased their focus on farming in an environmentally sustainable way.

We are a system 1³ farm and milk once a day, so regenerative agriculture is very close, closely aligned to what we're already doing. But making the change to regenerative agriculture would mostly be due to Miraka. – interview 8

Furthermore, amongst half of the interviewees there was a change observed in the family/lifestyle value, towards the pou of 'ngā tāngata' (the people). From purely focusing on the direct parents/children/siblings as a decision-making factor, farmers felt they had become part of a 'wider family', also referred to by interviewees as the 'Miraka whānau'. These interviewees saw the whānau approach as a key consideration in managing the farm. This was for example expressed by the care they showed towards their employees.

Our farm statement is to help people through into [a farm career]. One of our main values of farming would be looking after people [...] and with the Te Ara Miraka programme we realised we've done it. – interview 4

Miraka as an institutional entrepreneur

Our findings have shown that for half of the interviewees, on-going messaging, communications and engagement with the supply team and other Miraka farmers have led to the internalisation of the pou in their values of farming. This section outlines the strategies Miraka has taken to stimulate change amongst its supply farmers (Table 2).

Mobilisation of material resources

Miraka significantly invested in freeing up resources to support their farmers in making change. Material resources were provided in a fourfold way: (i) Rewarding farmers by providing an incentive, e.g. higher pay-outs for the implementation of desired practices; (ii) Granting awards, for example for the 'top 10 milk solids' farmers and the highest scores in the 'Te Ara Miraka' programme; (iii) Organising social activities, such as an annual dinner and golf tournament; and iv) Providing education support by visiting farmers and assisting them in, for example, making plans required for compliance purposes.

Rewarding farmers by providing an incentive was mentioned most often by interviewees as a motivation for changing their on-farm practices.

³ Aotearoa pastoral farming can be categorised in five production systems, primarily based on when imported feed is fed to dry or lactating cows during the season and secondly by the amount of imported feed and/or off farm grazing. System 1 farming refers to all grass self-contained, all stock on the dairy platform.

No feed is imported. No supplement fed to the herd except supplement harvested off the effective milking area and dry cows are not grazed off the effective milking area. More information can be found on <https://www.dairynz.co.nz/business/the-5-production-systems/>.

Table 2 Overview of the strategies applied by Miraka to establish change amongst its supply farmers

Category of strategies	Observed strategy	Expressed via
Material resources	Incentives	Farmers can receive an additional payment of 20 cents per milk solid (which equals between 3 and 5% on top of their basic milk price), depending on the degree of successful practice change they make
	Awards	Two awards are handed out during the annual dinner: 'grade free', which acknowledges all the farms that have had a season without any low milk quality grades and 'top 10 Te Ara Miraka', which acknowledges the top 10 farms in the Te Ara Miraka programme and provides a grand award for the top supplier for the year
	Social activities	An annual dinner and awards evening, farmer conferences, workshops and a golf tournament are organized to connect the supply farmers with each other, as well as build relationships and confidence with Miraka employees and business values
	Staff support	Annual visits to each of the supply farmers individually, support with setting up plans for environmental compliance, regular newsletters, and communications, are set up by the farm supply team to provide support, networking, and relationship management
Rationale for change	The Miraka story/Te Ara Miraka	Set up of a farm excellence framework and a communications approach, e.g. video stories, newsletter articles which focuses consistently on the story of Miraka/Te Ara Miraka and the values of the company
Connecting actors	Connection to Māori values	Formally introducing new supply farmers to the Māori values through a ritualised welcome inside a traditional Māori meeting house (whareniui). The annual dinner and awards evening, six-monthly updates, farmer conferences, and workshops are all avenues where Miraka culture and values are consistently shared, reflected, and reinforced between all actors

Because it's tied into your pay-out there's an extra motivation there. I'm not sure if you'd put so much effort into it if it wasn't, but of course you're striving to get all those points, and that's reflected at the end of the season. If you're going to do a good job you might as well do the best you can so then you can pay for the most. — interview 2

However, this view was not shared by all interviewees. In interview 9 it was described that achieving the maximum score (and adopting all good practices) was not worth the cost and that therefore there was a lack of motivation to make all the changes suggested under Te Ara Miraka.

So I usually get about \$0.17-\$0.18 [...]. But yeah I'm comfortable where I'm at. There's a couple of things that I don't achieve but it would cost an awful lot of money so there's no return for me so I wouldn't go there.—interview 9

The second material resource, awards, consisted of two main categories: 'grade free', which acknowledged all the farms that had a season without any low milk quality grades and 'top 10 Te Ara Miraka', which acknowledged the top 10 farms in the Te Ara Miraka programme. The interviewees showed the awards provide a range of meanings to them. First, they provide acknowledgement and appreciation, especially for on the ground staff:

It was nice to be able to take one of the workers [to the annual rewards dinner] because they're just as respon-

sible. So it was a nice reward for them, which they appreciated.—interview 2.

Second, this then provides a motivation to continue implementing the practices and keeping up the good work:

It definitely is a motivator. Not just money. I guess it is kudos, you could say it's a bit vanity, but it's just that natural urge to do well.—interview 6.

The last material resource Miraka provided was support and education by staff in order to help their farmers in 'mastering competence'. Yearly visits were conducted to each of the supply farmers by the Miraka milk supply team. During these meetings, good management practices were discussed, and it provided farmers an opportunity to reflect on their practices.

The construction of rationales for change

Miraka started approximately 10 years ago, during the height of the dairy intensification phase in Aotearoa, but also during the period in which farmers became aware of the significant future environmental, animal welfare and wellbeing challenges. Miraka provided a new story, which resonated with a number of farmers and was mentioned as an additional motivation to join Miraka. However, although the initial rationale was welcomed by most interviewees, after supplying Miraka for a number of years, some interviewees expressed doubts about the success of the Miraka story. This

is for example due to the lack of seeing the Miraka story receiving added value in a marketed product:

The Te Ara Miraka programme probably gives a good perception to public, and to the environment, and maybe to the government, but in terms of actual revenue that it creates for the dairy company to pay back to farmers, I would doubt it provides anything at all'.—interview 4.

For Miraka to legitimize change, half of the interviewees seemed to be looking for proof in a value-added product, which in their view shows the public is acknowledging the good practices they are implementing. Subsequently, they indicated this to be a motivation to continue making investments and having certainty around receiving the premium to cover (a part of) the cost of implementation.

Connecting actors to achieve change

In addition to mobilising material resources and introducing new rationales, connecting with new actors is important to establish change amongst not only the Miraka suppliers, but also other farmers in Aotearoa. Connection of the Miraka suppliers to new actors has taken place on several levels. The aim of this connection is to support farmers to become part of the Miraka whānau (family) and understand and embed the Māori cultural values. This is for example done via inviting new supply farmers for a welcome ceremony on the marae.⁴ The majority of the interviewees (and staff members) indicated to never have been on a marae, but appreciated the welcoming and experience it as becoming part of the whānau.

Cultural values were also highlighted during the dinner and associated awards ceremonies, where an emphasis was placed on connecting farmers with Māori cultural values, such as *manaaki tangata*—uplifting and sustaining the status, dignity, and importance of everybody. This was described during interview 1, in which the interviewee, who used to supply to Fonterra, explained how special it was to be able to talk to the CEO and be treated as equally important. This was an experience totally different from any other company the interviewee had ever heard of or been part of.

I went to a welcoming dinner at our yearly dinners that we have with Miraka. I love the fact that everybody

is treated exactly equally. It doesn't matter whether you're a new overseas client that's buying millions of dollars' worth of product or it's the new person that's there to drive the milk tanker or to sweep the floor in the factory; everyone is treated equally. The CEO makes a point of coming and speaking to everybody. It's very big on Māori core values.—interview 1.

To approximately half of the interviewees this sense of belonging and feeling part of the Miraka whānau motivated them to commit to supply to Miraka long-term, even if the incentive payments might decrease. However, not all farmers make this cultural connection, and some farmers indicate they see the role of a processing company differently.

It's a business to me. Come down milk the cows, send the milk, give me a decent pay-out. So it's really just a business, money and cents. But, yeah I—yeah I don't feel like I'm part—yeah I'm not part of the Miraka farming. I'm a supplier of Miraka's milk.—interview 11.

Discussion

This paper examines how institutional entrepreneurship by Miraka led to change amongst their Pākehā supply farmers. The discussion first focuses on the change undergone by the interviewees, then reflects on how Miraka acted as an institutional entrepreneur and how this might contribute to an alternative system. Last, it reflects on further research required to increase understanding into opportunities for wider change.

The five pou: fundamental change towards Māori key values?

One of the initial questions in conducting this research was: 'do Pākehā farmers change their values, beliefs, and practices as a result of supplying a Māori agribusiness?' Findings show that farmers were initially guided by *business* and *family* values in making their on-farm decisions, similar to values identified in earlier work into the Aotearoa farming profession (Knook and Turner 2020). To embed Miraka's key cultural concepts, *kaitiakitanga* and *tikanga*, the interviewees were introduced to the five pou: *ngā tāngata* (the people); *te taiao* (the environment); *ngā kau* (cows); *miraka* (milk); and *taurikura* (prosperity). We observed interviewees merging the pou *taurikura*, *miraka* and *ngā kau* under *business* values, to obtain a high-quality product in a financially efficient way. As a response to the institutional entrepreneurship by Miraka, half of the interviewees embedded the other two pou. First, the *family* value was expanded to *ngā tāngata*, which instead of including direct family involved in

⁴ A marae is a traditional and central gathering place for Māori communities. It has a multiplicity of personal, social, spiritual and historical functions. It is a place where people gather to discuss, debate, and consider important topics and current events. Often associated with a large meeting house (*whareniui*) and dining hall (*whare kai*) it is place where new residents or important guests can be formally and ceremonially welcomed, fatted and hosted.

the business in decision-making, now included for example employees as part of the wider ‘Miraka whānau’. Second, farmers embedded *te taiao* in their decision-making and used this as a key consideration, equal to for example *business* in the future design of the farm.

Ultimately, the introduction of the interviewees to the five pou, is meant to lead to the embedding of kaitiakitanga and tikanga. Although these key terms are not literally introduced to the interviewees, the introduction of the pou has led half of the participants to show changes in their farm management, by realising the connection between human activities, the land and water. The lack of change for some interviewees might be caused due to the fact that embedding new values requires time (Micelotta et al. 2017). Interviewees who had been supplying closer to 10 years, showed more linkage to the cultural values of Miraka. However, due to the small sample size, further research would be required to confirm this.

The strategies contributing to change

The research showed that half of the interviewees changed their values, beliefs and practices. Hesitation to change was caused by doubts around Miraka’s ability to produce a higher value product. To allay this doubt, increased transparency might be required, especially since a number of farmers enjoy Fonterra’s narrative (i.e. being part of a cooperative by buying shares into the company to be able to supply milk) and feel an attachment to the sense of being part of something bigger (Forney and Stock 2014). Fonterra can provide stability through contracts and shares that have provided continuity and perception of ownership and autonomy to many in the dairy sector (Stock et al. 2014). While operating within a different structure (not a cooperative), Miraka may thus need to strengthen the ways suppliers are able to provide input, which may lead them to connect to the values more strongly. Peredo et al. (2004) identifies close connection to community based development as a requirement for successful indigenous entrepreneurship. Hence, Miraka may benefit from an additional strategy to address the doubts that currently stand in the way of some farmers embedding Miraka values.

Another group of interviewees express that the incentives are not sufficient to completely balance the cost of implementing all the practices suggested under Te Ara Miraka. The immediate investment for the adoption of good management practices is seen as a large cost, which compromises the current profitability (and is not required by other processing companies). This confirms that this group still strongly aligns with the dominant view of the Western development economy. The inability to look beyond economic success factors (Peredo et al. 2004), might not fit, in the long term, with the Miraka approach.

Indigenous institutional entrepreneurship

We asked, ‘how does Miraka function as an indigenous institutional entrepreneur?’ First, we observe that strategies used by Miraka, such as mobilisation of resources, communication of rationale and building connections, have been included in traditional entrepreneurship (e.g. Hardy and Maguire 2017; Lawrence and Suddaby 2006; Mars and Schau 2017). At some scale, i.e., amongst half of the interviewees, this has led to a change in values. However, it is not clear what else might be required to build change at a broader scale.

The challenge faced by Miraka is the economic system in which the entrepreneurship was introduced: a traditional Western development economy. Successful indigenous entrepreneurship in previous studies, e.g. in Postero and Fabrikant (2019), showed a main difference with our case study in Aotearoa. In previous success stories, the creation of an alternative system was initiated from a large indigenous community, all based in one location with a strong historical connection to their ancestral territory and natural resources. Hence, amongst all the individuals involved there was already a shared set of values and beliefs, which had existed for a long time (Peredo et al. 2004). As (at the time of data collection) a 10-year-old company, consisting of both Māori and Pākehā staff and farmers, Miraka finds itself at the beginning of creating their community, by embedding shared values and connection to the land amongst their farmers. Hence, although potential is shown regarding farmers embedding the key concepts, Miraka might only be at the beginning of creating shared values amongst its community. The Miraka case study shows potential however, because similar to the study by Postero and Fabrikant (2019), Aotearoa finds itself in the process of a social and political experiment, in which exploration and debates occur as to how Aotearoa Māori values and principles can exist in the face of a dominant Western economy. Miraka provides a small opportunity to understand the space between the Western traditional economy and the modern Māori economy where both economic systems operate to service different but complementary outcomes.

Conclusion

The rationale for this research was to increase understanding of the role of indigenous SMEs, more specifically an indigenous milk processor, in encouraging a shift in farmers’ motivations beyond production to incorporate more social and environmental goals. The findings from this study of a Māori-owned SME, show that a targeted programme built on inclusive cultural, social and environmental values can lead to changes in worldview, although more complete change

towards alternative systems requires time and the opportunity to build a larger group each sharing similar values. This research was a useful step in understanding values and beliefs around indigenous entrepreneurship, but future research would benefit from the exploration of institutional and cultural barriers on a wider level, to increase understanding in the interactions between Western and Indigenous economic values. Topics we would like to see addressed in future research centre around institutional economics: what are the barriers that SMEs like Miraka and their supply farmers face from an institutional economics perspective? Furthermore, we would like to see more research into how indigenous SMEs can contribute more to diverse economies. We wonder how institutional entrepreneurship would apply and progress within SMEs that only consist of indigenous actors. To address the concept of ‘discursive psychology’ (Edwards and Potter 1992), this research should include both Māori and Pākehā interviewers, to account for the background of the researcher in interviewee responses. Finally, research is required on a larger scale, as Miraka is a small-scale processing company. Further research is needed to investigate whether the same strategies would work in other processing companies.

Appendix: Interview guide

1. Can you tell me about your background and the background of the farm?
2. Can you describe what being a supplier for Miraka means to you?
3. Do you experience a difference between supplying to Miraka vs other milk companies?
4. What was your motivation for joining Miraka?
5. Can you describe your journey over the last x years, while you have been part of Miraka?
6. Thinking of some important changes you made over the past x years, can you talk me through the process of making changes?
7. How do you find working with different members of Miraka?
8. Are there any examples of where being involved in Miraka has helped respond to other external pressures?
9. What do you experience the best aspects of being part of Miraka?
10. What do you experience the most challenging aspects of being part of Miraka?
11. Has your perspective on farming changed over the last x years?
12. What do you think would have happened if you wouldn't have joined Miraka?
13. What are your plans for the future (longer term)?

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References

- Amoamo, M., D. Ruwhiu, and L. Carter. 2018. Framing the Māori economy: The complex business of Māori business. *MAI: Journal A New Zealand Journal of Indigenous Scholarship* 7 (1): 66–78. <https://doi.org/10.20507/maijournal.2018.7.1.6>.
- Banner, S. 2000. Conquest by contract: Wealth transfer and land market structure in colonial New Zealand. *Law & Society Review*. 34 (1): 47–96. <https://doi.org/10.2307/3115116>.
- Barr, T.L., and J. Reid. 2014. Centralized decentralization for tribal business development. *Journal of Enterprising Communities* 8 (3): 217–232. <https://doi.org/10.1108/JEC-10-2012-0054>.
- Beers, P.J., F. Hermans, T. Veldkamp, and J. Hinszen. 2014. Social learning inside and outside transition projects: Playing free jazz for a heavy metal audience. *NJAS—Wageningen Journal of Life Science* 69: 5–13. <https://doi.org/10.1016/j.njas.2013.10.001>.
- Brooking, T., and E. Pawson. 2010. *Seeds of empire: The environmental transformation of New Zealand*. London: I.B. Tauris.
- Bryman, A. 2012. *Social research methods*. Oxford: Oxford University Press.
- Burton, R.J.F. 2004. Seeing through the “good farmer’s” eyes: Towards developing an understanding of the social symbolic value of “productivist” behaviour. *Sociologia Ruralis* 44: 195–215. <https://doi.org/10.1111/j.1467-9523.2004.00270.x>.
- Chapman-Tripp. 2017. Te Ao Māori trends and insights. Auckland, Aotearoa-New Zealand.
- DairyNZ, LIC. 2020. New Zealand dairy statistics 2019/2020. Hamilton, Aotearoa-New Zealand.
- Dana, L.P. 2015. Indigenous entrepreneurship: An emerging field of research. *International Journal of Business and Globalisation* 14 (2): 158–169. <https://doi.org/10.1504/IJBG.2015.067433>.
- Edwards, P., A. Fleming, J. Lacey, L. Lester, E. Pinkard, K. Ruckstuhl, C. Bezuidenhout, T. Payn, K. Bayne, and T. Williams. 2019. Trust, engagement, information and social licence—Insights from New Zealand. *Environmental Research Letters* 14 (2): 1–9. <https://doi.org/10.1088/1748-9326/aaf33c>.
- Edwards, D., and J. Potter. 1992. *Discursive psychology*. London: SAGE Publications Ltd.
- Foote, K.J., M.K. Joy, and R.G. Death. 2015. New Zealand dairy farming: Milking our environment for all its worth. *Environmental Management* 56 (3): 709–720. <https://doi.org/10.1007/s00267-015-0517-x>.
- Forney, J., and P.V. Stock. 2014. Conversion of family farms and resilience in Southland, New Zealand. *International Journal of Sociology of Agriculture* 21 (1): 7–29.

- Getz, C., and K.D. Warner. 2006. Integrated farming systems and pollution prevention initiatives stimulate co-learning extension strategies. *Journal of Extension* 44 (5): 1–8. <https://doi.org/10.2307/1243767>.
- Gibson-Graham, J.K. 2008. Diverse economies: Performative practices for “other worlds.” *Progress in Human Geography* 32 (5): 613–632. <https://doi.org/10.1177/0309132508090821>.
- Greenwood, R., C. Oliver, T.B. Lawrence, and R.E. Meyer, eds. 2017. *The SAGE handbook of organizational institutionalism*, 2nd ed. London: SAGE Publications Ltd.
- Greenwood, R., M. Raynard, F. Kodeih, E.R. Micelotta, and M. Lounsbury. 2011. Institutional complexity and organizational responses. *Academy of Management Annals* 5 (1): 317–371. <https://doi.org/10.1080/19416520.2011.590299>.
- Greenwood, R., R. Suddaby, and C.R. Hinings. 2002. Theorizing change: The role of professional associations in the transformation of institutionalized fields. *The Academy of Management Journal* 45 (1): 58–80.
- Gudynas, E. 2011. Buen Vivir: Today’s tomorrow. *Development* 54 (4): 441–447. <https://doi.org/10.1057/dev.2011.86>.
- Hardy, C., and S. Maguire. 2017. Institutional entrepreneurship and change in fields. In *The SAGE handbook of organizational institutionalism*, ed. R. Greenwood, C. Oliver, R. Suddaby, and K. Sahlin, 198–217. London: SAGE Publications Ltd. <https://doi.org/10.4135/9781526415066>.
- IPCC. 2022. *Climate change 2022: Impacts, adaptation and vulnerability*. Geneva: Switzerland.
- Jarzabkowski, P., J. Matthiesen, and A.H. van de Ven. 2009. Doing which work? A practice approach to institutional pluralism. In *Institutional work—actors and agency in institutional studies of organizations*, ed. T.B. Lawrence, R. Suddaby, and B. Leca, 284–316. New York: Cambridge University Press.
- Kellogg, K.C. 2009. Operating room: Relational spaces and micro-institutional change in surgery. *American Journal of Sociology* 115 (3): 657–711. <https://doi.org/10.1086/603535>.
- Knook, J., R. Dynes, I. Pinxterhuis, C.A.M. de Klein, V. Eory, M. Brander, and D. Moran. 2020a. Policy and practice certainty for effective uptake of diffuse pollution practices in a light-touch regulated country. *Environmental Management* 65: 243–256. <https://doi.org/10.1007/s00267-019-01242-y>.
- Knook, J., V. Eory, M. Brander, and D. Moran. 2020b. The evaluation of a participatory extension programme focused on climate friendly farming. *Journal of Rural Studies* 76: 40–48. <https://doi.org/10.1016/j.jrurstud.2020.03.010>.
- Knook, J., C. Eastwood, and I. Pinxterhuis. 2022. Understanding mechanisms that agricultural producers apply in response to evolving social pressures. *Journal of Rural Studies* 89: 306–315. <https://doi.org/10.1016/j.jrurstud.2021.12.009>.
- Knook, J., and J.A. Turner. 2020. Reshaping a farming culture through participatory extension: An institutional logics perspective. *Journal of Rural Studies* 78: 411–425. <https://doi.org/10.1016/j.jrurstud.2020.06.037>.
- Lawrence, T.B., and R. Suddaby. 2006. Institutions and institutional work. In *The SAGE handbook of organization studies*, ed. R. Greenwood, C. Oliver, R. Suddaby, and K. Sahlin, 215–254. London: SAGE Publications Ltd. <https://doi.org/10.4135/9781848608030.n7>.
- Maguire, S., C. Hardy, and T.B. Lawrence. 2004. Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada. *Academy of Management Journal* 47: 657–679.
- Manning, P.K. 1982. Analytic induction. In *A handbook of social science methods*, ed. P.K. Manning and R.B. Smith, 273–302. Cambridge: Ballinger.
- Mars, M.M., and H.J. Schau. 2017. Institutional entrepreneurship and the negotiation and blending of multiple logics in the Southern Arizona local food system. *Agriculture and Human Values* 34 (2): 407–422. <https://doi.org/10.1007/s10460-016-9722-3>.
- McGuire, J., L.W. Morton, and A.D. Cast. 2013. Reconstructing the good farmer identity: Shifts in farmer identities and farm management practices to improve water quality. *Agriculture and Human Values* 30 (1): 57–69. <https://doi.org/10.1007/s10460-012-9381-y>.
- Micelotta, E., M. Lounsbury, and R. Greenwood. 2017. Pathways of institutional change: An integrative review and research agenda. *Journal of Management* 43 (6): 1885–1910. <https://doi.org/10.1177/0149206317699522>.
- Ministry for Primary Industries. 2013. The dairying and clean streams accord: Snapshot of progress 2011/2012. Wellington, Aotearoa-New Zealand.
- Miraka Ltd. 2021. Our environment: tō tātou taiao. <https://www.miraka.co.nz/ourenvironment>. Accessed 8 Nov 2021.
- Miraka Ltd. 2019. Who are we? <https://www.miraka.co.nz/who-are-we-.html>. Accessed 30 Aug 2021.
- Moller, H., C.J. MacLeod, J. Haggerty, C. Rosin, G. Blackwell, C. Perley, S. Meadows, F. Weller, and M. Gradwohl. 2008. Intensification of New Zealand agriculture: Implications for biodiversity. *New Zealand Journal of Agricultural Research* 51 (3): 253–263. <https://doi.org/10.1080/00288230809510453>.
- Monteiro, P., and D. Nicolini. 2015. Recovering materiality in institutional work: Prizes as an assemblage of human and material entities. *Journal of Management Inquiry* 24 (1): 61–81. <https://doi.org/10.1177/1056492614546221>.
- Morgensen, S.L. 2011. The biopolitics of settler colonialism: Right here, right now. *Settler Colonial Studies* 1 (1): 52–76. <https://doi.org/10.1080/2201473X.2011.10648801>.
- NZ Institute of Economic Research. 2018. *How does the dairy sector share its growth?* Wellington: NZ Institute of Economic Research.
- OECD. 2019. Producer and consumer support estimates database. <https://www.oecd.org/eu/producerandconsumersupportestimatesdatabase.html>. Accessed 11 Oct 2019.
- Orange, C. 2013. *The story of a treaty*. Wellington: Bridget Williams Books Ltd.
- Peredo, A.M., R.W. Anderson, C. Galbraith, B. Honig, and L.P. Dana. 2004. Towards a theory of indigenous entrepreneurship. *International Journal of Entrepreneurship and Small Business* 1: 1–20. <https://doi.org/10.2139/ssrn.1276522>.
- Postero, N., and N. Fabricant. 2019. Indigenous sovereignty and the new developmentalism in plurinational Bolivia. *Antropological Theory* 19 (1): 95–119. <https://doi.org/10.1177/1463499618779735>.
- Prager, K., P. Labarthe, M. Caggiano, and A. Lorenzo-Arribas. 2016. How does commercialisation impact on the provision of farm advisory services? Evidence from Belgium, Italy, Ireland and the UK. *Land Use Policy* 52: 329–344. <https://doi.org/10.1016/j.landusepol.2015.12.024>.
- QSR International Pty Ltd. 2018. NVivo.
- Rosin, C. 2013. Food security and the justification of productivism in New Zealand. *Journal of Rural Studies* 29: 50–58. <https://doi.org/10.1016/j.jrurstud.2012.01.015>.
- Scarsbrook, M.R., and A.R. Melland. 2015. Dairying and water-quality issues in Australia and New Zealand. *Animal Production Science* 55 (7): 856–868. <https://doi.org/10.1071/AN14878>.
- Stats NZ. 2022. Imports and exports. <https://www.stats.govt.nz/topics/imports-and-exports>. Accessed 6 March 2022.
- Stock, P.V., J. Forney, S.B. Emery, and H. Wittman. 2014. Neoliberal natures on the farm: Farmer autonomy and cooperation in comparative perspective. *Journal of Rural Studies* 36: 411–422. <https://doi.org/10.1016/j.jrurstud.2014.06.001>.
- Tall, I., and H. Campbell. 2018. The “Dirty Dairying” campaign in New Zealand: constructing problems and assembling responses. In *Agri-environmental governance as an assemblage: Multiplicity*,

power and transformation, ed. J. Forney, C. Rosin, and H. Campbell, 161–176. London: Routledge.

Tau, T.M., and M. Rout. 2018. The tribal economy. *The Journal of New Zealand Studies* 27: 92–109. <https://doi.org/10.26686/jnzs.v0ins27.5178>.

Wolfe, P. 2006. Settler colonialism and the elimination of the native. *Journal of Genocide Research* 8 (4): 387–409. <https://doi.org/10.1080/14623520601056240>.

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