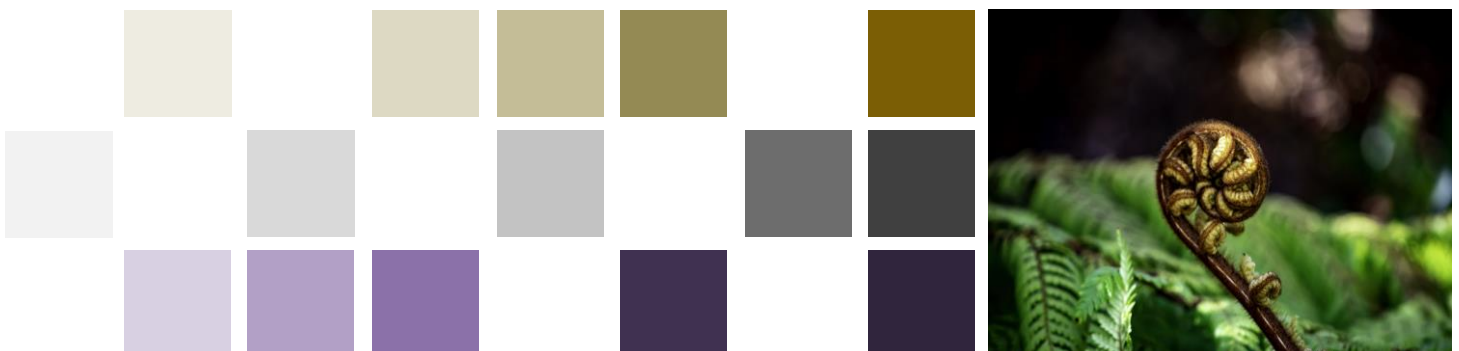


Food and Beverage Sector Collaboration Analysis

Drivers, opportunities, and challenges

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Executive summary

He rau ringa e oti ai

Many hands make light work

The collaborative effort of many is greater than the individual.

Enhanced collaboration is an opportunity to improve business outcomes in the food and beverage sector

The food and beverage industry transformation plan (ITP) presents a significant opportunity to encourage higher levels of collaboration within the sector, which in turn could result in greater success and outcomes for firms and therefore New Zealand. For context, recent research indicates New Zealand firms have low absorptive capacity (the ability to recognise, understand, and use knowledge to develop their business), are less connected to research, and show a low willingness to engage in collaborative activities. It is our view that collaboration can deliver better outcomes than reliance on competition alone because collaboration strengthens a firms' dynamic capabilities by:

- improving a firm's problem solving
- improving a firm's process of learning, knowledge-building, and generating know-how
- mobilising creativity.

Collaboration can take many forms, be multi-directional, and happens on a spectrum of formality. Critically, successful collaboration is underpinned by trust and common goals. In the context of Māori business, collaboration is underpinned by much wider principles that encapsulate Te Ao Māori and Te Reo Māori (Mika et al., 2021). The purpose of this work is to therefore understand opportunities for, and barriers to collaboration in the New Zealand food and beverage sector, as well as provide implementable recommendations to MPI to promote and foster greater collaboration and contribute to a more resilient, sustainable, and successful food and beverage sector.

To understand the opportunities for, and barriers to collaboration we have undertaken a scan of collaboration literature and conducted numerous stakeholder interviews to compare stakeholder experiences. Our analysis of collaboration in the sector is anchored by this definition:

Collaboration should be interpreted as two or more firms working together to achieve a common goal in a way that is not competitive and where any transactions between the partners relating to the collaboration are no more than minor.

This definition of collaboration is not overly prescriptive which has allowed us to look at various types of collaboration and in various capacities. Our analysis also extends to identify situations and examples where we believe superior business outcomes (e.g. quicker speed to market, greater pool of input resources, etc.) may have been realised because of collaboration instead of competition.

Key findings from our analysis

There are numerous key findings from our analysis, some of which echo collaboration literature.

- **Collaboration is not something that can be forced.** This is because fundamental to collaboration are trust between parties and shared goals and values. Without these fundamental conditions being met, collaborations fall over. Programmes with explicit hard collaboration requirements risk attracting “false positives”.
- **Identifying and socialising common goals and/or shared problems is a starting point for potential collaboration.** There appear to be many firms with similar goals and/or shared problems yet unawareness of the similarities and therefore the opportunities to collaborate. One of these shared problems is market access particularly for new and emerging product opportunities which do not have regulatory approval in key global markets.
- **Attitudes toward collaboration appear more positive if there is a focus on export markets, rather than domestic.** This is likely because the domestic market is small and there is limited capacity for expansion and collaboration without sacrificing market share. Conversely, export markets are sufficiently large that the prospect of sacrificing market share does not appear to deter potential collaboration. This could lend itself to an NZ Inc. approach across the food and beverage (sub)sectors for export market development.
- **Emerging or high-growth sectors may represent the best opportunities for collaboration.** These sectors typically have more small firms all facing similarly steep learning curves. Collaboration offers a way for these small firms to share resources and capabilities and speed up the acquisition of knowledge and know-how by de-risking trial and error processes. The ability to collaborate of these small firms, however, may be constrained by resources.
- **There appear to be opportunities for collaboration in foundational research.** Many parties are engaging in foundational research individually and therefore duplicating effort. This links back to firms’ awareness of similar goals and/or shared problems – if firms recognise they are undertaking the same research individually, they may pool resources instead to speed up the process or extend the scope of what research is feasible.
- **The landscape for support is confusing and variable.** This is a finding bigger than collaboration alone. When firms can access support, it is extremely helpful, but often businesses do not know how to find support in the first place and spend considerable time searching. There are many different support mechanisms which all have different goals and eligibility, which can be confusing for firms to understand. Sometimes businesses are unable to access support. Government support organisations appear to lack a cohesive strategy and unified way of engaging with firms.

Recommendations

Below sets out recommendations we believe, if implemented, have the potential to enhance collaboration and therefore improve business outcomes in the food and beverage sector, for the benefit of both firms and New Zealand.

1. **Increase exposure to opportunities for collaboration.** This firstly requires making sure firms are aware of common goals and/or shared problems amongst the (sub)sector by articulating and socialising them amongst firms. Further, it requires the Government in its interactions with the (sub)sectors to prioritise looking for, and providing, opportunities that foster communication and relationship building between firms, and put firms in touch with each other if there is commonality of goals and/or problems. This should build upon existing interactions such as grower bodies and formal and informal networks of businesses.
2. **Emphasis on the potential benefits of collaboration to encourage uptake.** This is about making the fundamentals, potential benefits, and potential outcomes of, and opportunities for, collaboration known to people.
3. **Improve cultural competency of non-Māori business to collaborate with Māori business.** Authentic engagement is a necessary precursor to collaboration with Māori business. The Government could make an explicit statement about assisting Māori business collaboration (both with Māori and non-Māori businesses). This may also mean the likes of MPI and NZTE work with Te Puni Kōkiri to establish common goals or problems facing Māori business in the sector to raise awareness of opportunities for collaboration.
4. **Provide a higher level of long-term funding to support collaboration.** Collaboration and the trust that necessarily underpins it can take years to develop. Long-term support is therefore more likely to build successful collaborative relationships.
5. **Coordination of stakeholders that support the food and beverage sector.** It is necessary that the stakeholders which support the sector, such as NZFIN, Callaghan, AgResearch, High Value Nutrition, etc., approach their roles with a unified view of fostering collaboration. These organisations (and others that support the sector) should be leveraging their network and oversight to identify opportunities for collaboration.
6. **Investigate opportunities for collaboration on foundational research projects.** We believe there is a strong case for Government-backed facilitation or support for developing open-source foundational research for things like market research (particularly for small- and medium-sized enterprises (SMEs) who cannot access NZTE support) or native ingredient use in food and beverage products that could have great benefits for the entire sector.

1. Purpose of identifying opportunities for, and barriers to, collaboration in F&B

This report has been commissioned to analyse opportunities for, and barriers to, collaboration in New Zealand's food and beverage sector.

A lot of research has been done on fostering innovation in New Zealand. How to overcome the challenges of size and distance to market is often at the core of this. As noted elsewhere (New Zealand Productivity Commission, 2018), these challenges limit the intensity of competition and weaken international connections. The Productivity Commission also identified firms' low levels of investment in knowledge assets (crucial to their ability to benefit from technological diffusion of national and global best practice) as another important cause of poor levels of innovation and productivity growth.

The Productivity Commission has recently argued that New Zealand's national innovation system has two identified weaknesses:

- low "absorptive capacity" of local firms – that is, the ability "of firms to learn – usually by using knowledge from their external environment – to improve their productivity"; and
- New Zealand's system is "highly fragmented and weighted too heavily to investigator-led research", leading to weaker research-business links.

Work the Commission funded as part of its inquiry into frontier firms explained that the low absorptive capacity problem has become more of a focus as industrial policies have shifted away from seeing the firm as central, to putting greater emphasis on networks and collaboration, particularly in smaller firms (Harris & Le, 2018, p. 24).

Depending on definitions and interpretation, collaboration can result in better outcomes than reliance on competition alone. This is because, in our view, collaboration can strengthen firms' dynamic capabilities, and, if applied to New Zealand's food and beverage firms, improve their absorptive capacity.

Improving the dynamic capabilities of New Zealand's food and beverage firms, which includes their managerial and organisational processes (routines or current practices and learning), could enhance the way they create new products and processes and respond to changing export markets. In our view collaboration is an important way in which firms' managerial and organisational processes could be enhanced. These processes consist of how firms:

- search for opportunities
- hear and process threats and opportunities
- mobilise creativity and innovation
- manage learning and accumulation knowledge (Harris & Le, 2018, p. 25).

According to Teece (2017), these processes define the firm's evolving problem-solving capability. In our view, collaboration is firms combining their efforts to solve shared problems. Collaboration has the potential to strengthen all these processes in our food and beverage sector.

As the sector stakeholders have indicated, more, or better, collaboration is an opportunity to achieve sector-wide uplift in productivity and economic growth. In a report that identifies examples of beneficial collaboration, it may be equally important to recognise and analyse situations where collaboration has not delivered the expected outcomes.

The focus of this project is on food and beverage sector and particularly exporters. It seeks to advance understanding of the:

- types of collaboration that exist, and their suitability
- opportunities for, challenges to, and drivers of collaboration
- drivers of unproductive competition.

1.1 Our analysis consists of a literature review and stakeholder interviews

We conducted a brief literature review and multiple stakeholder interviews across numerous subsectors to aid our judgement and analysis of the current state of collaboration within the food and beverage sector in New Zealand. Our analysis is also supplemented by collaboration data available in both the domestic and international contexts where possible.

The review of literature focused mostly on:

- the foundational elements of successful collaboration, both within and outside of the food and beverage sector
- the different types of collaboration that occur between parties
- the barriers and enablers for collaboration, both within and outside of the food and beverage sector
- some examples of overseas Government programmes aimed to support collaboration that may be useful to be aware of and form the basis for future research on New Zealand Government collaboration initiatives.

Canvassing these areas in the literature review allows us to compare and contrast the New Zealand experience of collaboration within the food and beverage sector to both academic collaboration concepts and overseas experiences.

1.2 Definitions we have used to guide our thinking

Our analysis makes use of the following definitions. Our definition of collaboration is:

“Collaboration should be interpreted as two or more firms working together to achieve a common goal in a way that is not competitive and where any transactions between the partners relating to the collaboration are no more than minor.”

This definition recognises that collaborations are often complex and evolving and do sometimes involve some monetary transactions. The focus is on collaborations where monetary transactions are minor.

Situations of “unproductive competition” are another important part of our analysis. The term “unproductive competition” was not defined in our scope and does not have much coverage in the literature. We have used it, with the meaning that it refers to situations where business outcomes would likely have been superior as a result of greater collaboration instead of competition.

For example, if two companies take a competitive approach to an activity, like conducting foundational research that could support both companies’ products, we investigate whether this could be unproductive competition because a collaborative approach might have provided better results.¹ The businesses might have had superior business outcomes (such as quicker speed to market, a greater pool of resources to leverage, knowledge sharing and synergy of ideas, etc.) in this case if they had collaborated. However, this is a difficult exercise because we cannot know for sure how the counterfactual situation would have occurred. We can explore this question in this way, though.

Stakeholders in a previous project for the Ministry for Primary Industries (Sapere Research Group, 2021) suggested this scenario also existed in government innovation support organisations, where a lack of a unified strategy for how NZ Inc. goes about innovation means the support organisations compete against each other to provide services, are not complementary or fit for service, and ultimately do not serve a common goal.

¹ From a previous project for MPI (Sapere Research Group, 2021) we heard from stakeholders anecdotally that businesses in the food and beverage sector “compete” on conducting foundational research that does not lead to any protectable IP outcomes (for example, research on basic compound information of an ingredient). In other words, a business is unable to protect the findings of this foundational research with a patent or some other form of legal block given it is so basic; it is only the more natural barrier of cost to conduct the research that prevents another business from doing the same.

2. Collaboration takes on many forms, underpinned by trust and common goals

A considerable amount of literature is dedicated to understanding the nature, types, motives, challenges, and barriers to business collaboration. Here we present a foundation for understanding the following:

- definitions of collaboration
- collaboration types
- fundamentals of collaboration
- motivations for collaboration
- the collaboration landscape in the food and beverage sector
- barriers to collaboration
- the role of government in fostering collaboration.

This section helps refine the scope of our research and guides us in the best focus for our examples of collaboration (or lack thereof).

2.1 Collaboration provides opportunity for greater benefits

Fundamentally and historically, collaboration has been defined as “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (Gray, 1989, p. 5). In other words, collaboration is about utilising respective capabilities to solve shared problems and achieve common goals. This can be achieved in numerous ways and is reflected in the various types of collaboration.

Collaboration can be a major driver of innovation, productivity growth, and quality job creation (Auckland Unlimited, 2021; Gellynck & Kühne, 2008; Ketels, 2017; Stank et al., 1999). Collaboration also has the potential to:

- increase speed to market of new and emerging products
- bring about cost savings
- increase sales volumes and manufacturing capabilities through co-location, co-manufacturing, shared equipment, and combined/volume purchases
- increase sales in local and overseas markets through combined marketing, sales, and distribution
- attain sustainable competitive advantage through, for example, co-funding of R&D or joint ingredient, IP, or product development (Auckland Unlimited, 2021).

For small- and medium-sized enterprises (SMEs), collaboration provides an opportunity to improve their innovation performance and obtain sustainable competitiveness (Lu & Yu, 2020).

2.2 Collaboration can be multi-directional and with varying levels of engagement

Collaboration can occur at all levels of the value chain, both vertically and horizontally. Collaboration can be broadly categorised into three main types (Kanter, 1994):

- Mutual service consortia are distant types of collaboration where similar companies in similar industries pool their resources to acquire a benefit too expensive to acquire independently.
- Joint ventures are where companies pursue an opportunity that requires a specific capability from each collaborator.
- Value chain partnerships are a strong form of collaboration. It is where companies in different industries with complementary skills link their capabilities to create value for the end user. These require a high level of commitment from collaborators.

2.3 Trust, common goals, and proximity are all fundamental to collaboration

Inter-organisational collaborations can be achieved both formally and informally (Dang et al., 2019; Macdonald, 1992; Martin-Rios & Erhardt, 2017). Regardless of formality, there are fundamental conditions for a successful collaboration. Kanter (1994) proposed the following three:

- The collaboration must be **mutually beneficial** for the participants. Ideally, this goes beyond a single deal. Long-standing business alliances are living systems that may evolve beyond their initial purpose. And an enduring connection offers participants options for the future, opening new and unforeseen opportunities.
- Collaboration **partners must recognise value in the other**. This does not mean recognising a mere exchange between partners. Instead, it comes from recognising the value that can be created via a shared endeavour.
- Informal networks between organisations. Formal systems cannot manage a collaboration. **Networks of informal connections can facilitate trust and enable inter-organisational learning.**

2.3.1 Trust is critical to ensure businesses are invested in collaborating

High levels of trust and investment in the partnership are also considered fundamental to a successful collaboration (Hattori & Lapidus, 2004; Nielsen, 2004). Trust can be deconstructed into perceived authenticity, ability to fulfil obligations, and commitment to the relationship (Solomon & Flores, 2003a). Social relationships between individuals are also a key source of trust, and key to enabling an inter-organisational collaboration (Balland et al., 2022). Trust is essential for collaborating for four main reasons (Nielsen, 2004):

- increased cooperation

- improved flexibility
- increased knowledge-transfer potential
- reduced coordination costs.

2.3.2 Common goals and/or shared problems present opportunities for businesses to work together

Beyond trust, successful inter-organisational collaborations are characterised by common goals (Garnweidner-Holme et al., 2021). Common goals and adversity represent an opportunity for collective action. For instance, small businesses seeking to penetrate the export market may recognise the value in collective action in overcoming barriers associated with that goal. Furthermore, collaboration can bring opportunities for serendipity and beneficial in-person interactions.

2.3.3 Proximity can help to build trust, business exposure, and increase opportunities for collaboration

The role of geographic proximity can be fundamental to enabling an inter-organisational collaboration (Feldman, 1994). Through serendipitous interactions on platforms of geographic proximity, individuals from different organisations may meet in-person. Through repeated instances of in-person interactions, individuals may develop trust (Balland et al., 2022) and recognise opportunities for collaboration. However, in-person interactions are not reserved for those organisations physically close to potential collaborators. In-person interactions can also be facilitated on temporary platforms of proximity, such as trade fairs and other industry events.

2.3.4 From a Māori perspective, there are a range of enablers of collaboration

Māori enterprise collaboration is enabled by a series of factors. Though some of these factors are not necessarily germane to the Māori business context, it is apparent that they are shaped by Māori perspectives. Māori enterprises are required to navigate a series of challenges that are similar, yet culturally distinct from the general challenges to collaborating that are discussed above.

Table 1: Enablers of Māori enterprise collaboration

Enabler	Meaning
Navigation of Māori values	Finding a balance between mana whenua ² and investor influence. In a non-Māori collaboration setting, collaborators with the greatest financial endowments may be prioritised. However, in a Māori context, the principles of manaaki ³ and whanaungatanga ⁴ means that potential collaborators are not prioritised based solely on financial investment. Collaboration is enabled by kōrero and compromise regarding the level of engagement with Māori values at the beginning of the arrangement.

² Territorial rights.

³ Care and support for others.

⁴ Kinship and family connection.

Partner identification and selection	The identification of a collaboration partner is typically based on the communication of competencies and capabilities. This means identifying the attributes required for the collaboration, then seeking partners with matching competencies and capabilities. In cases of international collaboration, a local presence in Aotearoa is preferred, as this allows in-person interaction, and reduces the potential for friction caused by language and cultural disparities.
Shared goals	In Māori enterprise, profit is typically not considered to be the only driver for collaboration. Instead, Māori collaboration is driven by shared goals of economic development, growing employment, and rights of tangata whenua. ⁵ For this reason, Māori report more seamless collaboration with one-another than with Pākehā counterparts.
Co-ordination	Relates to the concerted effort of government departments in fostering collaboration. While it is recognised that government departments operate simultaneously, they must work in conjunction to fully support Māori enterprise collaboration.
Trust	Trust is considered essential for collaboration because it facilitates openness, knowledge-sharing, and transparency. This allows potential collaborators to understand values, goals, and expectations of the collaboration. In an untrusting environment, collaborators may limit their commitment to a collaboration, which in turn may act as a barrier to its success.

Source: (Mika et al., 2021)

⁵ Indigenous rights of the land.

3. Data suggests room for improvement

We explore collaboration activity in the context of New Zealand, including:

- Motivations for collaboration among businesses, in the food and beverage sector and in other sectors.
- New Zealand's collaboration activity compared with other countries.
- Major barriers to collaboration within the food and beverage sector.

3.1 Leading motivations in food and beverage

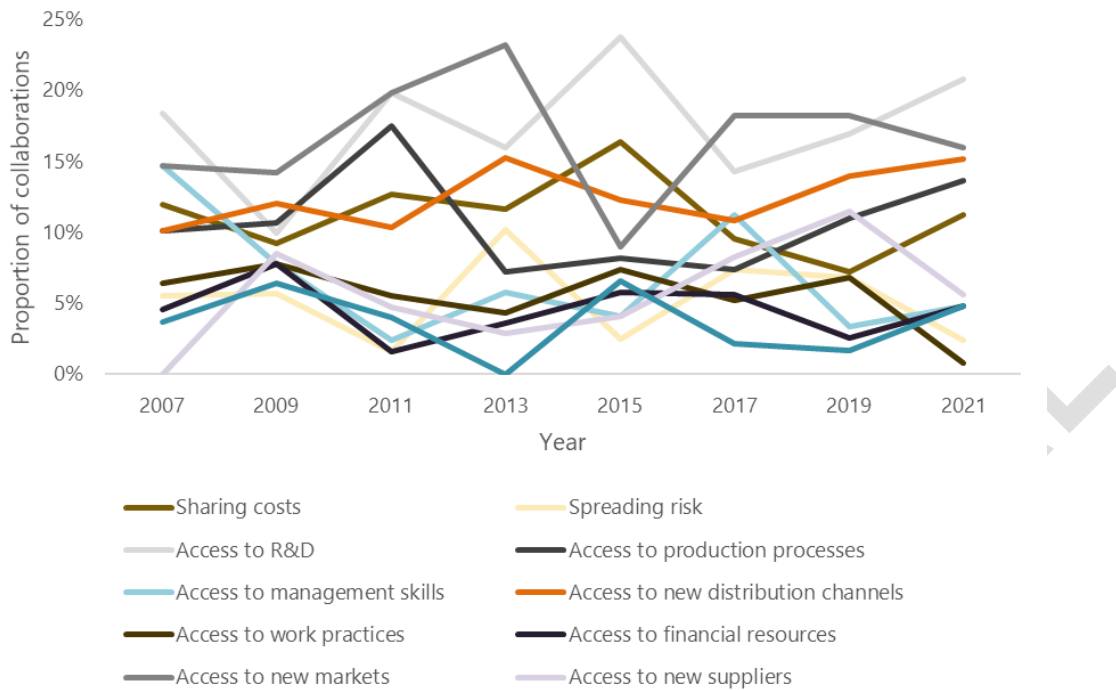
Access to new markets and distribution channels, production processes, and research and development opportunities are leading motivations for collaboration in the food and beverage sector.

There are likely multiple drivers of collaboration in the food and beverage sector both domestically and globally. For example, one paper found collaboration in the food and beverage sector to have been motivated by a desire to coordinate sourcing, enhance production capabilities, and improve logistics (Stank et al., 1999). The authors found, in this instance, collaboration in food and beverage alters the supply chain. It transitions from a loose association of complementary businesses to a series of coordinated entities focused on improving efficiency. This enables higher levels of service provision and reduced costs (Stank et al., 1999).

Across Europe, collaboration in the food and beverage supply chain has been cited as integral to innovation performance of food and beverage firms (Gellynck & Kühne, 2008). The authors assert this is because inter-organisational learning is activated when collaborations occur. There is pertinence in this for New Zealand SMEs, whose ability to innovate and remain competitive is significantly enhanced by collaborating (Lu & Yu, 2020).

Figure 1 shows a wide variety of reasons for collaboration in the New Zealand food and beverage sector. The more significant reasons for collaboration have historically tended to be access to new markets and distribution channels. But in the past decade, access to research and development has also been an important driver and looks to have become more significant.

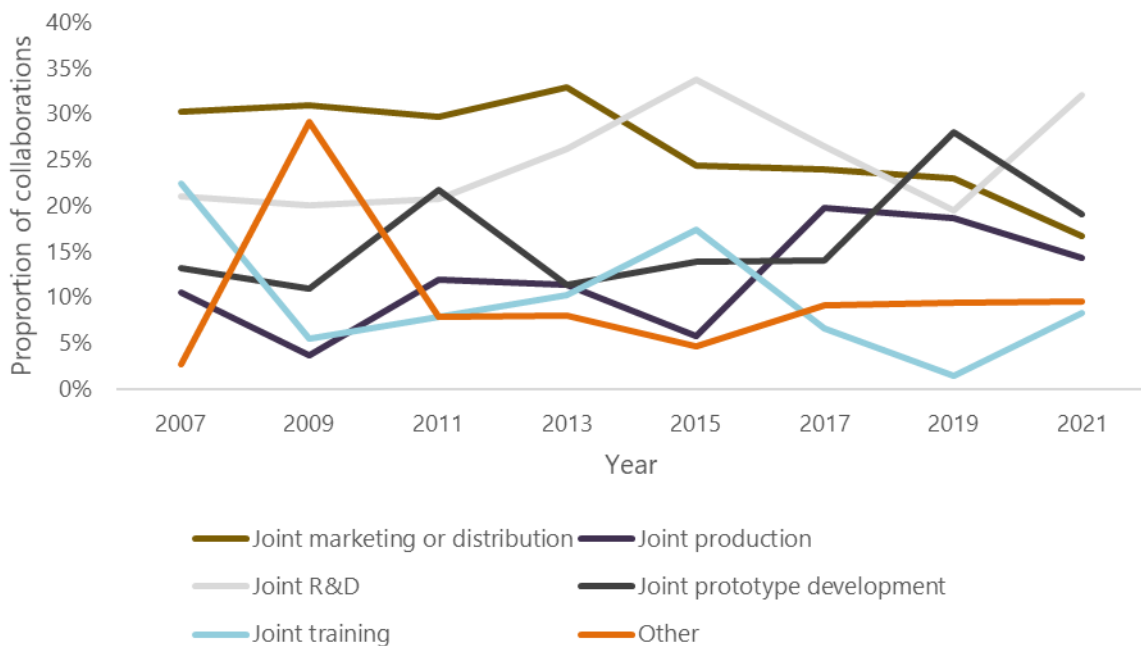
Figure 1: Reasons for collaborations within the food, beverage, and tobacco sector as proportion of all collaborations over time



Source: Statistics New Zealand Business Operations Survey (BOS) (Statistics New Zealand, 2021)

Supporting this observation, joint R&D has been a common type of collaboration in New Zealand food and beverage sector but appears to have increased in importance recently (Figure 2 below).

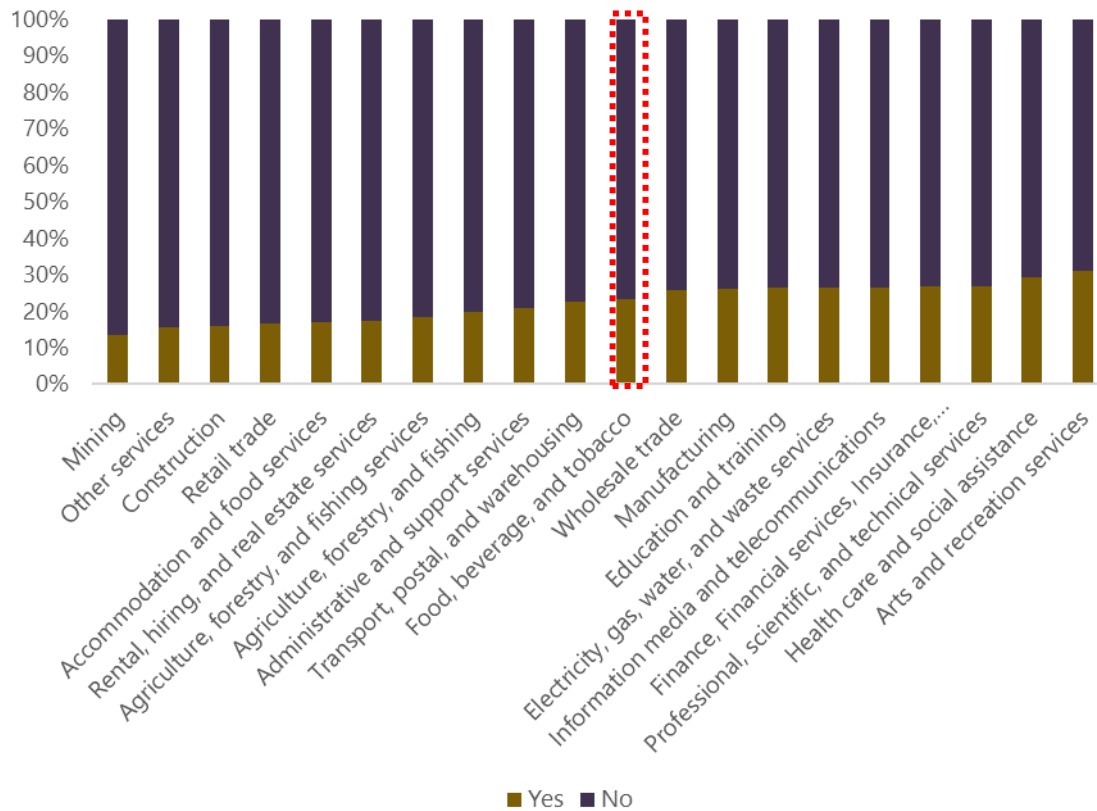
Figure 2: Types of collaboration agreements within the food, beverage, and tobacco sector as proportion of all collaborations over time



Source: Statistics New Zealand Business Operations Survey (BOS) (Statistics New Zealand, 2021)

There are different levels of collaboration across the food and beverage sector. Figure 3 shows agriculture and fishing classification of the food and beverage value chain reports a lower level of collaboration while the food, beverage, and tobacco classification reports it is more collaborative than some of New Zealand’s largest industries.

Figure 3: Proportion of firms engaging in cooperative agreements by industry (2021)

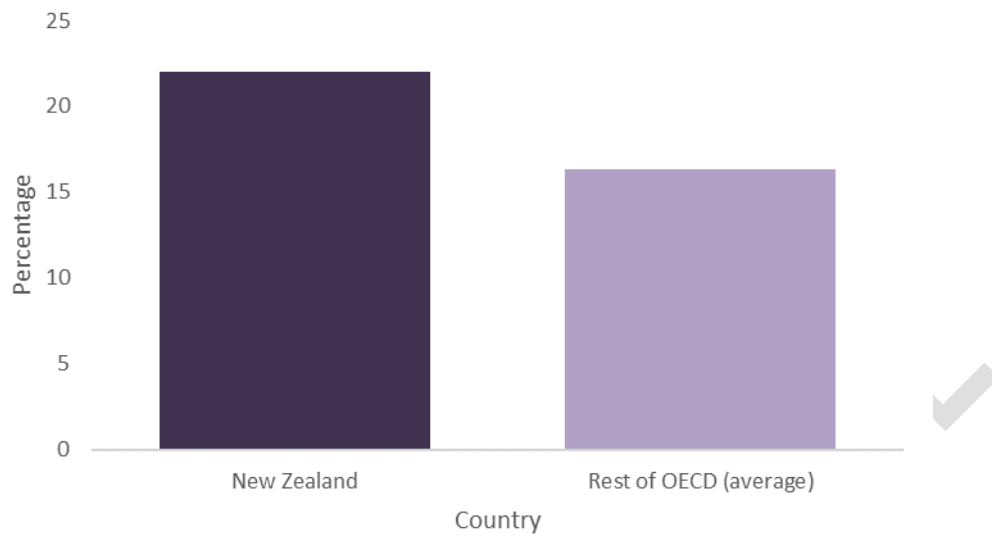


Source: Statistics New Zealand Business Operations Survey (BOS) (Statistics New Zealand, 2021)

3.2 New Zealand lags the rest of the OECD

According to OECD research, New Zealand performs relatively worse in inter-firm collaboration compared with the rest of the OECD. For example, when developing business process innovations, New Zealand has a higher rate of firms working independently.

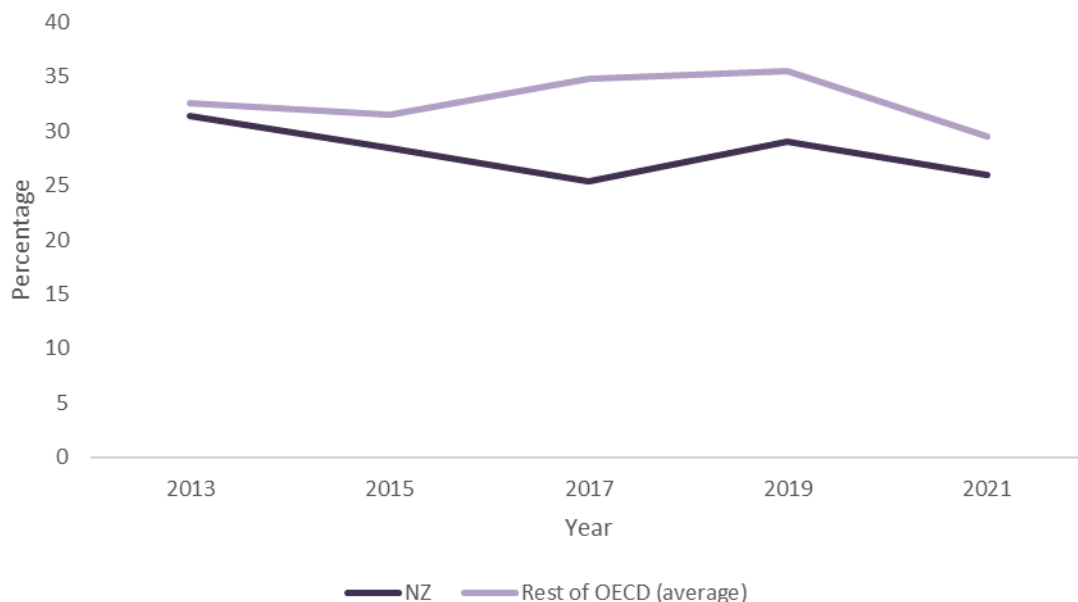
Figure 4: Business-process-innovative enterprises that developed processes only on their own in New Zealand versus rest of OECD, as a percentage of total firms in 2021



Source: OECD Innovative Indicators (2022), Sapere Analysis

Furthermore, the proportion of firms collaborating on innovative activities as a proportion of all firms participating in product and/or process innovation activities is also comparatively lower than the rest of the OECD. This excludes firms that are not innovating.

Figure 5: Firms collaborating on innovative activities, as a proportion of all product- and/or process-innovative firms over time

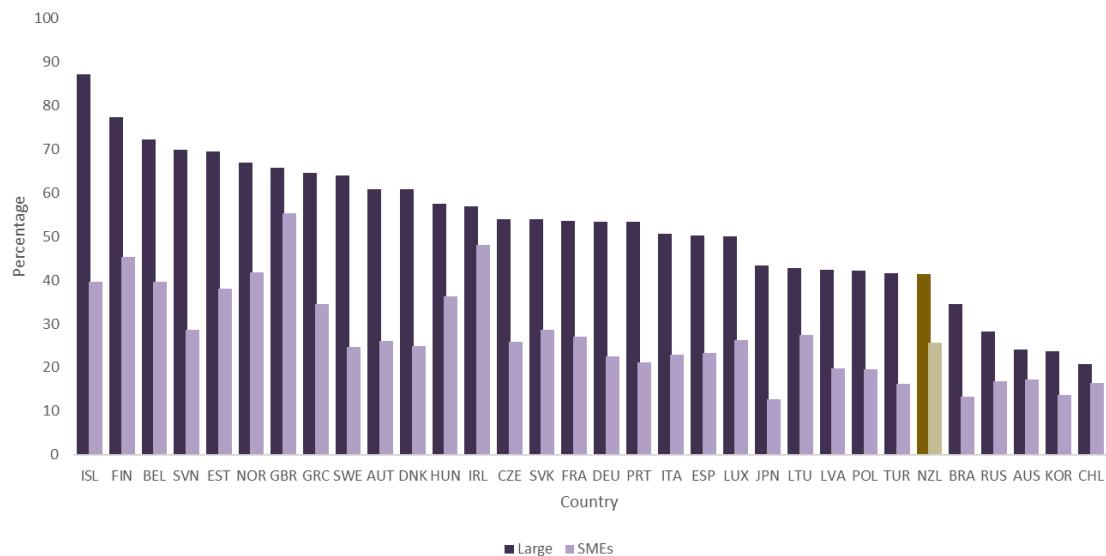


Source: OECD Innovative Indicators (2022), Sapere Analysis

For SMEs, rates of collaboration are somewhat lower than large firms. The figure below shows the percentage of innovation-active firms cooperating on innovation activities (including R&D) in 2021,

except this time split by business size. SMEs refers to small-medium enterprises, which have between 6-249 employees. Large firms are anything above this level. New Zealand has been highlighted in gold and follows the same key convention (darker = large firms, lighter = SMEs).

Figure 6: Firms cooperating on innovation activities (including R&D) as a percentage of innovation-active firms by size of business in 2021



Source: OECD Innovative Indicators (2022), Sapere analysis

For almost all OECD countries, larger firms are cooperating on innovation activities (including research and development) a lot more than SMEs. For New Zealand this holds true as well with around 40 per cent of large firms cooperating on innovation activities, and roughly 25 per cent of SMEs cooperating on innovation activities. It is possible to get further insights into collaboration specifically in the New Zealand food and beverage sector as explored in the following section.

3.2.1 SMEs increasingly look to global market collaborations from inception, but face challenges

Globally, SMEs are frequently required to consider international expansion and collaboration opportunities from their inception to be competitive and sustainable (Gassmann & Keupp, 2007; Lu & Yu, 2020). For New Zealand, this is likely because business growth is limited by New Zealand's small domestic consumer market. Due to resource constraints, SMEs can look to achieve internationalisation via collaborations. These can be both formal partnership arrangements and informal networks (iPliK, 2010). Internationalisation collaborations typically occur between SMEs and multi-national enterprises (MNEs) (iPliK, 2010). The research shows these collaborations with MNEs can be challenging due to a series of factors, which may also be applicable in the New Zealand context.

Table 2: Challenges to SME internationalisation collaboration

Challenges	
Disparate agendas	Issues with aligning and prioritising agendas. As the larger firm, MNEs can cancel and postpone projects, suiting their own agenda. This can be costly for the SME. Furthermore, spending time aligning agendas and values towards creating a collaboration system is costly for the SME.
Monitoring market conditions	When exporting products, SMEs find it difficult to monitor international market conditions. These issues arise due to communication issues with the MNE. This has a knock-on effect as to how the product is marketed internationally.
Power imbalances	Imbalances of power between SMEs and MNEs means that MNEs control decision making and negotiations. SMEs report not being present or invited to MNE meetings and negotiations. This can lead to sub-optimal management and marketing of the SME's product on international markets.
Competition for collaboration	SMEs feel like they are required to compete with other international firms to be an MNE collaboration partner. This means the SME dedicates time and resources to looking appealing to potential MNE collaborators. Furthermore, changing market conditions make it difficult for an unknown SME to attract an MNE collaborator.
Friendship	Informal interactions and friendships can give rise to an international collaboration. They are especially important in igniting trust in the collaboration partner. These trust-based relationships, or friendships, are effective in overcoming other SME-MNE challenges. However, developing these relationships is contingent upon face-to-face interaction.
Face-to-face interaction	Face-to-face interaction is found to be the most effective means of initiating a collaboration with an MNE. Building rapport helps the SME overcome the barrier of being unknown to the MNE. Face-to-face interaction facilitates the development of friendships. SMEs may plan for these interactions at industry trade fairs, and strategically target desired MNE partners. However, this can involve extensive travel, which can prove costly for a SME, and has been challenged more broadly by 2.5 years of travel restrictions due to the COVID-19 pandemic.

Source: (PliK, 2010)

Many of these same issues can arise with other types of collaboration as well.

3.3 Trust has been shown as a major barrier to collaboration in food and beverage in New Zealand

A recent study of Auckland food and beverage manufacturers (Auckland Unlimited, 2021) found that collaboration is inhibited by several factors:

- There is insufficient experience of productive collaboration among firms. This reflects a misunderstanding of the norms, values, capabilities, and structures that may enable a collaboration.
- There is a strong degree of mistrust, especially between SMEs. This prevents collaboration as SMEs fear losing their core knowledge, especially if it grants them a competitive advantage. A recent Sapere report for MPI (Sapere Research Group, 2021) looking at access to innovation facilities arrived at a similar conclusion, with stakeholders telling us IP

(and therefore potential competitive advantage) caused many issues and prevented a willingness to share knowledge freely and frankly.

- Food and beverage firms focus mainly on the domestic market. Because New Zealand has a comparatively small consumer market, this intensifies competition. Competitive rivalry makes identifying opportunities for collaboration more challenging.
- There is also a lack of motivation on the part of food and beverage firms to share knowledge, driven by a focus on domestic markets that fuels high levels of rivalry.⁶
- Regional economic development focuses too heavily on reducing barriers to market entry, rather than encouraging collaboration between existing firms in the market.

There are several organisations that support the development of the food and beverage sector in New Zealand, such as Callaghan Innovation, NZTE, and Food Innovation Network. However, there is a lack of collaboration among these entities (New Zealand Productivity Commission, 2021).

Furthermore, there is a lack of clarity regarding the roles and responsibilities of each of these. For SMEs, this makes the support landscape challenging to navigate and access (Auckland Unlimited, 2021). Food and beverage firms we interviewed as part of our recent review of access to innovation facilities echoed this sentiment (Sapere Research Group, 2021).

3.4 Global collaboration schemes may be useful references for the New Zealand Government

The OECD seeks to build better policies for better lives for its member countries and more widely. Its Science, Technology and Innovation Directorate researches these policy areas and provides a lot of helpful analysis that includes guidance for governments aiming to foster greater levels of collaboration.

Business Finland's approach to encouraging collaboration has been referenced in various OECD publications. It is a national agency which supports firms in locating business partners, creates business networks, develops action plans, and funds projects and business ecosystems (OECD, 2021). Similar agencies are in operation across Europe, namely the Czech Republic, France, and Spain. Such agencies aim to support the development of business alliances and relationships. These endeavours indicate the importance of stimulating networking and interaction as a means of promoting collaboration (OECD, 2009).

The OECD has proposed a framework for the sequencing of activities by government to enable integrated policy making alongside the formulation and implementation of collaboration strategies between public and private organisations for extractive projects (OECD, 2016).⁷ While this is about extractive projects, it may be transferable to wider settings. The main points of the framework are:

⁶ The authors of (Auckland Unlimited, 2021) note rivalry and competition are not considered the same thing. Rivalry reduces proclivity to collaborate, while competition can lead to collaboration.

⁷ Extractive projects refer to projects that take raw materials, including oil and other minerals from the earth.

- Adopt a comprehensive long-term vision and implementation strategy to build competitive and diversified economies and create in-country shared value out of natural resources.
- Build an empirical basis to inform decision-making through inclusive participatory process.
- Unlock opportunities for in-country shared value creation by investing in the local workforce and supplier development, as well as shared infrastructure.
- Support and contribute to innovation leading to new products and services.
- Establish effective and transparent monitoring and evaluation systems and regularly review the collaboration strategy.

The paper further discusses what host governments can do to help with public-private partnership in extractive projects. However, again, this is likely applicable more generally:

- Improve the investment climate; assess ease of doing business in country. Strengthen the enabling conditions for business development such as removing trade and investment barriers and addressing other constraints such as those identified in World Bank report on ease of doing business.
- Develop a plan for inclusive local workforce and supplier participation.
- Promote transparency, including clearly communicating if and how factors such as local employment, procurement, skills upgrading, training, and tech transfers are factored into tender evaluation processes.
- Facilitate linkage of multinational firms with local firms, particularly in SMEs.

The National Linkage Programme (NLP) in Ireland was also studied by the OECD as a success story to provide Moldova with some recommendations for implementing something similar. The NLP is a government-implemented support programme that promotes supply chain linkages between local food producers and supermarkets, specifically by providing a platform for interaction between food producers and retailers, and lifting local producers to be able to supply to large retailers (OECD, 2020). This includes identifying and contacting suppliers and retailers, conducting business development reviews, providing training and one-to-one coaching for local producers, matchmaking of producers and retailers, and follow-up of the partnerships created. In this OECD report, the recommendations were for the Moldovan government to implement targeted programmes to enhance supply chain linkages between processors and retailers by:

- building databases and registries that capture detailed information on local SMEs, made publicly available so it is easily visible
- providing business matchmaking services to facilitate supply chain linkages
- filling gaps by testing and increasing capabilities of local suppliers (OECD, 2020).

These programmes serve to illustrate the potential mechanisms governments can implement to bring collaborative partners together.

4. Stakeholders revealed insights which align with literature

Our research investigated a variety of collaborations with differing degrees of achievement and identified some specific areas where collaborative effort has the potential to benefit all involved.

4.1 Establishing and developing trust is fundamental to collaboration

It is clear from both the literature and stakeholder engagement that trust is core to the development of successful collaborative relationships. Without pre-existing trust between parties, establishing a relationship that can result in collaboration may take a long time.

“Precursor to collaboration is trust and respect. Something we have tried to do through being transparent and honest. Trying to build a relationship before start discussing commercial dynamics.”

“[A collaborative programme in primary industries] has taken some years to build to its current level.”

“Trust and attitude are key requirements for successful collaborations.”

It is therefore necessary that initiatives aimed at generating collaboration take a long-term view, combined with open communication, to allow for the development of trust and strong relationships between parties.

4.2 Collaboration cannot be forced; but opportunities can be provided and barriers lowered

Collaboration cannot be forced. Successful collaboration relies on having the right people involved, in the right setting, and with common goals and a willingness and ability to trust other parties. We heard from some stakeholders that collaboration is often discretionary, particularly for SMEs with limited resources and capabilities. This was a theme in the gin industry and in native ingredients.

Any efforts from a third party (such as the government) at encouraging collaboration can likely only highlight opportunities for collaboration or try and reduce any barriers that prevent businesses from accessing said opportunities. These efforts can be focused on making sure:

- businesses can connect with one another
- the settings of business relationships are appropriate for and conducive to collaboration
- there is ongoing support to sustain the collaboration and give it the greatest chance of success.

Trials are seen as a good way to test a relationship, develop trust and increase confidence in the benefits from the collaborative endeavour. Once trust is developed it is much more likely a partnership will continue or develop and diversify.

“The parties must discover the opportunity to collaborate themselves for it to succeed. It can’t be forced on them from outside.”

4.3 Identifying and socialising common goals and/or shared problems is a starting point for potential collaborations

The literature and stakeholder engagement both show that common goals and/or shared problems are core to successful collaborations. When entering and supporting a collaboration, it is essential to consider what each business involved wants to achieve and has to offer the relationship.

Again, the willingness to test and trial collaborative effort can be established from discussing common goals and/or shared problems. For example, we see an increasing number of food and beverage firms with a common core sustainability focus – this commonality may lead to businesses being more willing to trust others and engage in collaborative ventures.

A third party could play a key role in facilitation and matchmaking for collaborations among businesses with common goals and/or shared problems by:

- engaging with groups of businesses to get them to articulate and socialise their goals and/or problems
- coordinating and linking businesses with common goals and/or shared problems
- providing ongoing guidance and support as needed.

Identifying and socialising common goals and/or shared problems that businesses have may make businesses more aware of collaboration opportunities and more willing and able to take the opportunities up.

4.3.1 One of these shared problems is market access, and it is longstanding

Export market access is a longstanding problem in common for a lot of businesses, although for various reasons.

- In one case, access is a problem for businesses wanting to use native ingredients. Regulatory approval proves to be a significant block for the entry of products that use native ingredients into export markets. To gain regulatory approval in general is expensive and takes a considerable amount of time, which is particularly unfeasible for small businesses just starting out, and even more unfeasible for a business considering pursuing it alone.
- In another case, getting the necessary scale to establish profitable channels to market appears to be challenging – again, particularly for small businesses just starting out that have limited resources and output to be able to establish it.

While for different reasons in each case, collaboration could provide a solution to (or at least lower barriers for) export market access. For products using native ingredients, collaboration on undertaking

the foundational research required for regulatory approval may lower the barriers to export market access. For businesses that lack the scale to establish profitable channels to market, collaborating on capabilities and access strategies may provide the sufficient scale and standing to gain market access. An example of this is Firstlight assisting others to join it in supplying through Whole Foods in the US market.

4.4 Attitudes toward collaboration appear more positive if the focus is on global markets, rather than domestic

In general, there appears to be a greater willingness to collaborate with firms operating in different areas or niches of the value chain, and when markets are not as mature. It appears a business's market focus (i.e. domestic versus export) may feed into its willingness to collaborate, with those focused on exports being more willing. A reason for this is likely because the New Zealand market for food and beverage products is small and therefore seen as an essential first step for many new food and beverage firms. Because it is small with limited available revenue, firms tend to be fiercely competitive to try to capture that revenue. If success in the domestic market is a core part of a business's strategy, the business will be less likely to collaborate with others (particularly horizontally) and more focused on maximising market share.

In contrast, if a business has a global approach and export market success is a core part of its strategy, there tends to be a more positive attitude toward collaboration and a greater willingness to engage (even horizontally). Many businesses we spoke to recognise the importance of exporting early in their development because of New Zealand's small local market but exporting represents a major step up in firm capabilities and can become an insurmountable barrier.

As we heard in the gin industry, not being as great of a threat to each other commercially (e.g. markets being significantly larger offshore than New Zealand, through having differentiated products, serving different markets and/or market segments, etc.) can make collaboration more attractive.

There may therefore be greater collaboration output and benefits from helping businesses within the sector incorporate exports as a core part of strategy.

4.5 Benefits can be realised across food and beverage sector by taking an NZ Inc. approach to export market development

Further, there may be benefits in adopting an NZ Inc. approach for the food and beverage sector (both within and across sub-sectors), allowing for export market development and competition with other country's offerings as a collective unit, while still allowing businesses to compete within the domestic market. This may be made even more feasible if export markets are already a core part of business strategies.

There are already some examples of this happening or being thought of, including for red meat (marketing campaigns), the gin industry (gin tourism and protection of standards), wine (marketing campaigns), and horticulture (protection of standards), where part (or all) of the subsector have

engaged in a situation with common goals – presenting New Zealand products on the world stage and focusing on bringing benefits to New Zealand as a whole (which then benefits the business as well).

This is in comparison to an alternate scenario, where individual businesses try to establish themselves as high-quality producers from New Zealand in an export market. In this scenario, it is likely a single business does not have the resources, scale, or appeal to effectively enter an overseas market and develop a strong footing.

Taking an NZ Inc. approach where businesses collaborate to put forward products to export markets (or promote products to export markets) as a whole (i.e. the collective sum of the sector) may mean businesses are more easily able to secure export market access and standing due to pooled resources, sufficient scale (from pooling), and mass appeal as well as lower some common overhead costs.

4.6 Foundational research is an area where we see an opportunity for beneficial collaboration

Foundational research is a very desirable aspect of developing an industry sector, whether that be to help businesses prove the safety of native ingredients for export market access or to understand a target market's tastes and preferences. Despite this, businesses:

- engage in conducting the required research for regulatory approval to access export markets on their own and protect it closely, to avoid free riders; or
- lack the resources to be able to engage in the required research alone and have not pursued a collaborative relationship to undertake the research.

For example, a stakeholder mentioned toxicity research for native ingredients (which is necessary for export market access) can cost upward of \$500,000 USD. Toxicity research of a native ingredient itself is not necessarily something that generates IP for the business that conducts the research – other businesses can go out and conduct the same research, albeit at the same considerable cost.

Collaborating on foundational research, given it is a pre-competitive activity, and offering access to the research for all participants (open-source style sharing) could allow businesses to access more information, develop food safety processes, and meet market access regulations at lower costs and with lower risk (i.e. de-risking investment by requiring a lower level of investment). Then, businesses could still differentiate themselves within the market based on their unique strategies and product offerings that build off the foundational research. An example of this is the self-regulated food safety regime developed in and applied to the aquaculture industry.

There were some examples we heard about where industries have collaborated on fundamental research:

- **Passion2Profit:** cooperation on market research activities in the pre-competitive space to understand markets' tastes and preferences and therefore where the demand is. Here, conducting the research to understand a market's taste and preferences better to build the export market share of New Zealand venison.

- **Gin industry:** open-sourcing research developing a consumer lexicon for New Zealand gins, and on botanicals for national commercial supply.
- **Family of Twelve:** members of the coalition had regular research and development sharing sessions and put on tutorials to share knowledge.

There were also some examples where we believe there is potential for collaborating on foundational research to lead to better outcomes:

- **Oat milk:** there could be the opportunity to collaborate on market research to understand how the world perceives New Zealand oat milk and the boxes it needs to tick to be successful in export markets.
- **Native ingredients:** collaborating on foundational basic toxicology and efficacy research likely has huge potential benefits by de-risking the investment process for individual businesses and allowing them to access export markets.

4.7 Emerging or high-growth sectors may represent the best opportunities for collaboration

We heard most about three things that feed into a business's willingness and opportunities for collaboration:

- size of the business
- the sector and its relative maturity
- the goals and/or problems of the business.⁸

The size of the business may play a part in the relative willingness to collaborate and the opportunities to collaborate. Smaller businesses may be more willing to collaborate since they do not have the same commercial interests as larger businesses (i.e. are not capturing a large part of the market, so are not afraid to work with others and do not feel they will be closed out) and can use collaboration as an opportunity to lift themselves up in terms of capabilities and success (particularly given steep learning curves at the start of a business – collaboration can speed up the acquisition of knowledge and know-how).⁹ It is usually because small businesses are exposed to new relevant knowledge through the collaboration, and can begin to iterate their ideas.

At the same time, however, smaller businesses may see collaboration as a discretionary activity due to their limited resources. As discussed in section 3.2.1 on barriers for small business collaboration, where there is a significant difference in the size of two businesses seeking to collaborate, it makes the collaboration more challenging. Building trust, communicating openly, and solving problems tends to be more difficult than if firms are a similar size, such as Primor and Southern Produce in the AVOCO collaboration.

⁸ This has been discussed previously in 4.3.

⁹ Here we consider and establish the distinction between “knowledge” and “know-how” that we use throughout the report. We use “knowledge” to refer to the holding of, and familiarity with, information. “Know-how” represents the ability and skill to use “knowledge” in some actionable way.

The sector itself and its relative maturity also appears to have an impact on the relative willingness to collaborate. Within a nascent industry there is not a lot of industry know-how, which therefore means trial and error is necessary. Collaborating and skill-sharing in a nascent industry when everyone has similar levels of expertise and can bring something different to the table likely speeds up the process of knowledge and know-how acquisition. Conversely, in relatively mature sectors there are likely well-established players who have well-defined processes and are more reluctant to collaborate given they already have some level of knowledge and know-how.¹⁰ The latter is cited by some as being the case historically in the New Zealand meat processing industry.

4.8 Government support is confusing, variable, and may not be well aligned

There appears to be a lack of cohesive strategy, goals, and implementation of the Government's support of the food and beverage sector. Our consultation with stakeholders suggests support mechanisms for food and beverage businesses have variable effectiveness, and overall, stakeholders identify to us there is disjointed and confusing policy.

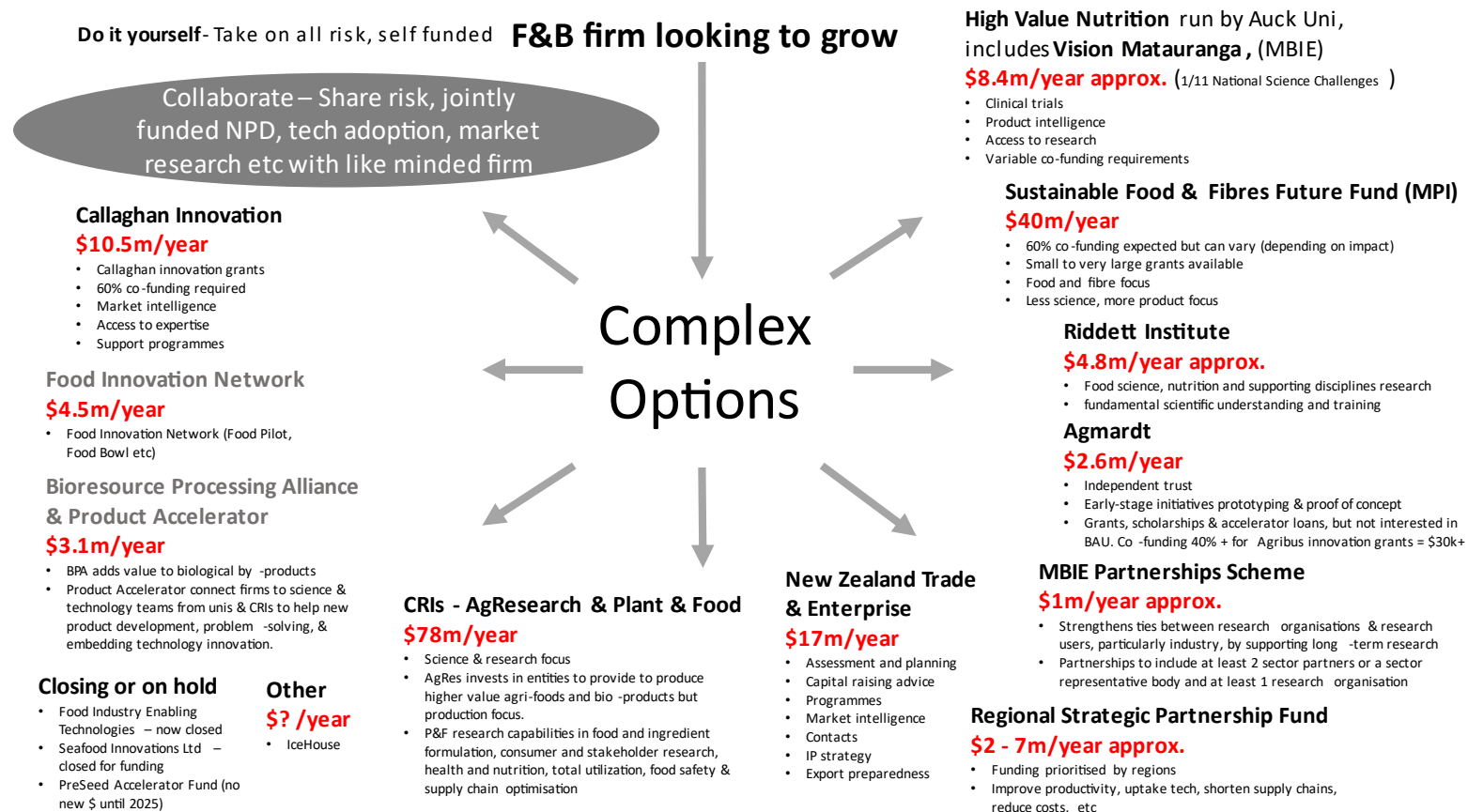
4.8.1 The landscape of Government support is confusing

There are many ways a food and beverage business could look to grow, and the ecosystem of support is complex. Figure 7 below shows some of the options food and beverage businesses have when wanting to grow their business, as well as some of the Government support available. Some of the Government support options have an explicit focus on collaboration.

When businesses can access support, it is extremely helpful, but often businesses do not know how to find the support in the first place and spend considerable time searching. Limited absorptive capacity may play a role in the ability of businesses to find and use this information. For example, we heard in the gin industry the path to export markets is unclear. In any food and beverage product that uses native ingredients, information on the regulatory requirements is also unclear.

¹⁰ There may be an even greater reluctance for well-established players to collaborate with small, new firms given they may have very different levels of knowledge and know-how and therefore may not bring similar contributions to the relationship.

Figure 7: The complexity of Government support available for food and beverage businesses



Source: Sapere

4.8.2 Some support is limited in its scope, which particularly impacts SMEs

Other support mechanisms such as NZTE that could prove useful for businesses with export market focuses are not equipped to deal with SMEs. This precludes a lot of “born global” (Gassmann & Keupp, 2007) businesses (i.e. small but have an export focus at the core of their strategy), particularly in rapid growth markets, from being able to get the necessary information and support to access and establish channels to export markets.

In a few instances, stakeholders suggested Government support that was available was good but not quite sufficient to be able to achieve all the stakeholders had set out to achieve.

4.8.3 The incentives of Government support organisations may not be aligned with stakeholders

Previous reports and experiences looking at food and beverage manufacturing in Auckland, performance of frontier firms in New Zealand, and access to innovation facilities respectively (Auckland Unlimited, 2021; New Zealand Productivity Commission, 2021; Sapere Research Group, 2021) have made it clear the government support system for innovation and for food and beverage businesses are often not well coordinated. There is a lack of clarity around “who is who”, how businesses can access services, and Government agencies (such as crown research institutes, NZFIN, and other innovation hubs) that support food and beverage innovation and development do not collaborate amongst themselves. This issue is bigger than this project alone, but it must be mentioned to provide the context within which we make recommendations.

Government agencies need to prioritise their resources to meet their objectives. They must make calls about the trade off between resources applied to help different firms and the likelihood of achieving the agencies objectives. This naturally makes them less willing to take on supporting roles for businesses that are difficult to work with or require a lot of support to achieve their goals. SMEs often have a lower ability to pay and represent a higher risk. They also often have relatively less pre-developed skills and understanding of processes. These firms are therefore likely to get less attention.

5. Recommendations

In this section we set out some recommendations to overcome barriers to collaboration in the New Zealand food and beverage sector and find opportunities for beneficial collaboration where not collaborating could represent a net loss for New Zealand. These recommendations consider the potential for action by Government, industry, and other actors that have been identified throughout the course of the analysis.

A qualification is that our consultation with stakeholders was limited largely to non-Māori businesses within the sector. The recommendations put forward may not be suitable in the context of Māori business.

As discussed, you cannot force collaboration, only improve the environment in which collaboration takes place so that collaboration is easy and provide ongoing support and facilitation so that collaboration is sustainable. This is done by improving incentives, increasing interactions, providing a higher level of long-term funding, and focusing on developing the necessary skills and knowledge both within support organisations and businesses. Programmes that have explicit collaboration requirements risk attracting “false positive” collaborations (i.e., collaborations that are not authentic and/or not generating shared value).

The larger a firm is the greater the likelihood there is capacity within the firm to undertake the work involved with scoping, entering, and maintaining a successful collaboration. Smaller firms often find the administrative burden of collaboration a barrier.

5.1 Increase exposure to opportunities for collaboration

To increase collaboration, a clear articulation of goals and problems can help to understand business opportunity and how businesses are able to help each other. Increased exposure might encourage businesses to enter relationships that generate shared value by leveraging strengths and covering each other's weaknesses.

To increase the likelihood of collaboration, the Government must ensure that its interactions (as well as the interactions of its agents)¹¹ with the food and beverage sector prioritise looking for opportunities to foster communication and relationship building, particularly within the subsectors, as well as socialise common goals and/or problems to make businesses aware of collaboration opportunities.

This interaction should build upon existing grower bodies and formal and informal networks of businesses, and work to identify common goals or problems that could be reached or solved through collaboration. Industry bodies are a natural place for these sorts of discussions to occur. Government interactions with these bodies over common problems are a good opportunity to encourage collaboration where there is potential for it to assist in solving these.

¹¹ This could include the likes of NZFIN, BioResource Processing Alliance, Callaghan, Plant & Food Research, AgResearch, MBIE, NZTE, MPI (SFFF), etc.

5.2 Emphasis on the potential benefits of collaboration to encourage uptake

The required attitude and willingness to collaborate with others cannot necessarily be taught. However, an emphasis on the fundamentals, benefits, and potential outcomes of collaboration may motivate people to adjust their behaviours to become more willing to engage discussions about collaborative activity. That willingness to engage would encourage uptake of collaboration.

Part of this requires reviewing what is being taught about collaboration in business-related programmes around the country, in both secondary and tertiary settings. Are the potential benefits of collaboration or case studies of successes showing up as part of subject matter? Are people aware of collaborative opportunities, or how collaboration can lead to the generation of shared value?

5.3 Provide a higher level of long-term funding to support collaboration

Collaborative relationships (and the necessary trust that underpins the relationships) can take years to develop, which means that support should look to be long-term in nature. Short-term funding and support to facilitate collaboration are likely to be less effective. Higher levels of long-term funding of initiatives like the Food Innovation Network and the Food Industry Enabling Technologies (FIET) programme are likely to engender more collaboration.

5.4 Improving cultural competency of non-Māori business to collaborate with Māori business

The Government could make an explicit statement about assisting Māori business collaboration (both with Māori and non-Māori businesses). This might mean the likes of MPI and NZTE working with Te Puni Kōkiri on identifying common goals or problems facing Māori business in the food and beverage sector to encourage awareness of opportunities for collaboration.

Commercial and cultural imperatives of Māori firms are navigated through tikanga Māori. Broadly, tikanga Māori are Māori values, norms, and cultural traditions that are weaved into Māori society (Manganda et al., 2022). At iwi level, there are disparities in how tikanga is perceived and practised, and at an enterprise level tikanga is engaged with to varying degrees. This means there is no one way to define Māori enterprises, nor is it possible to characterise a single Māori perspective regarding enterprise. Nonetheless, some form of tikanga is typically present in Māori enterprises, and it is generally prioritised over profitability (Mika et al., 2021).

In developing collaboration policy inclusive of Māori enterprises, consideration must first be given to the values that comprise tikanga Māori, namely mahi tahi.¹² Mahi tahi denotes collective action focused on the delivery of collective goals, otherwise known as collaboration. In both historical and contemporary enterprise contexts, Māori are considered natural collaborators (Mika et al., 2021).

¹² Working as one.

However, Māori enterprise collaboration typically occurs within the sphere of Māoridom (Mika et al., 2021), meaning Māori to non-Māori collaboration is uncommon. There is, therefore, an opportunity to expand the collaboration landscape between Māori and non-Māori firms.

Disparate values represent a significant challenge to Māori to non-Māori enterprise collaboration. Guided by tikanga, the aspirations of Māori firms frequently diverge from the typical enterprise objectives of non-Māori firms (Mika et al., 2021). Consequently, Māori to non-Māori enterprise collaborations are characterised by a misalignment of incentives. This is significant because, as our case studies have indicated, aligned incentives are integral to a successful collaboration. From a policy perspective, this suggests there would be utility in providing tikanga education to non-Māori firms to enable them to be more effective collaborators with Māori firms. Similarly, there is potential utility in developing cultural competencies in non-Māori firms.

Respect for te reo Māori and Te Ao Māori are frequently imperatives of a Māori enterprise collaboration (Mika et al., 2021). Māori food and beverage firms have previously reported that non-Māori firms often misunderstand and are reluctant to accommodate Māori cultural norms. Consequently, Māori firms have found themselves engaging in collaborations with overseas firms (Mika et al., 2021). Knowledge of te reo Māori and Te Ao Māori in overseas firms is low, but the capacity for discrimination based on culture is also low. In other words, a lack of cultural appreciation and understanding means non-Māori firms in New Zealand are missing opportunities to collaborate with Māori firms. The provision of cultural competency training and education to non-Māori firms, therefore, represents an interesting avenue for facilitating Māori to non-Māori collaboration in the New Zealand context.

5.5 Coordination across the stakeholders that support the food and beverage sector

Government agencies and the organisations they fund (such as the Food Innovation Network, Plant and Food, AgResearch, Callaghan, SFFF, High Value Nutrition, etc.) need to approach their roles with a view to fostering collaboration. For example, these organisations should be leveraging their network and oversight to identify when businesses are looking at solving similar larger commercial, research, or market access problems and suggest exploring collaboration with that other entity.

5.6 Common pool research as an opportunity for future collaboration(s)

There is a strong case for Government-backed facilitation or support to develop a foundational evidence base that can be used to improve market access for all products using native ingredients. There may also be similar opportunities involving market research (particularly for SMEs who cannot access NZTE support).

The evidence base formed would include things like basic toxicity and compound information for native ingredients, as well as the export requirements for different markets that businesses could access and use in their product development and export strategies. This would be to target businesses' common challenges, ensure businesses are not duplicating efforts to conduct research

that does not have IP outcomes, de-risk investment in further research and business development, and speed up the path to market. Food and beverage businesses would likely contribute the types of native ingredient uses and formulations they want to have in their products to generate this evidence base. This consultation would be necessary to ensure the work is done in a way that is as broad as possible and serves as many interests as possible, while still being of use.

The Scottish botanicals library (see page 94 of this report) is an excellent example of how something like this could look, be developed, and socialised back to stakeholders to be used to lift the entire industry. Further research and learnings from this example may draw richer insights.

There would no doubt be challenges around trust and businesses' willingness to participate in such arrangements. A way to build trust is to trial and test a collaborative relationship step-by-step, breaking collaborations up into smaller ventures that require relatively less significant investment. If things become too problematic as the relationship progresses, the step-by-step approach allows for multiple exit opportunities possibly de-risking the use of government money.

Rules would need to be established about how contribution to the activity would work as well as how a business can benefit from the research to ensure it is a fair system that does not disproportionately affect some parties (particularly SMEs). From our observations, an arrangement like this would be most likely to succeed where businesses have common goals, are mission-driven, and have an early focus on export markets.

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Appendix A Literature scan

A considerable amount of literature exists on collaboration within the business environment, exploring the nature and types of collaboration, as well as the requirements for success, challenges, and benefits of collaboration. This scan is a basis for understanding:

- fundamentals of business collaboration
- why companies would want to collaborate (i.e. the benefits of collaboration)
- types of collaboration within the business environment.
- challenges to collaboration
- likely examples of unproductive competition.

This scan may also help to refine the scope of our research and identify areas for project case studies. It should not be considered an exhaustive search and review of the literature.

Fundamentals of business collaboration

Collaboration between companies can be achieved through both formal and informal channels (Dang et al., 2019; Macdonald, 1992; Martin-Rios & Erhardt, 2017). There are some fundamental conditions for business collaboration to be successful. Kanter (1994) proposes that business alliances:

- must yield benefits for the partners but are more than just a deal. Business alliances are living systems that evolve progressively in their possibilities, and beyond the immediate reasons for entering an alliance, the connection offers parties an option on the future and opening new and unforeseen opportunities.
- that both partners deem successful ultimately involve collaboration and creating new value together (i.e. shared value), rather than mere exchange and getting something back for what you put in. Partners value the skills each brings to the alliance.
- cannot be controlled entirely by formal systems but require a dense web of interpersonal connections and internal infrastructures that enhance learning.

The shared value created between partners during collaboration results from policies and practices that contribute to competitive advantage while strengthening the communities that the companies operate within (Kramer & Pfitzer, 2016; Porter & Kramer, 2011). Shared value can be generated by reconceiving products and markets, redefining productivity in the value chain, and from strengthening local clusters – all three requiring a sufficiently robust market ecosystem (Kramer & Pfitzer, 2016; Porter & Kramer, 2011).

Collaboration requires high levels of trust and investment from both parties (Hattori & Lapidus, 2004; Nielsen, 2004). Solomon and Flores (2003b) break trust down into authenticity, history of fulfilment, the ability to fulfil, and commitment to the relationship. The table below from Hattori and Lapidus (2004) shows the different types of relationships between companies and their corresponding state of trust, motivating force, outlook, behaviour, and potential outcomes.

Table 3: A matrix of dimensions/dynamics of four types of relationships

Relationship type	State of trust	Motivating force	Outlook	Behavior	Potential outcomes
Collaborative	Highly invested	For the good of the whole	Synergy	Responsible	Breakthrough innovation
Cooperative	Transaction oriented	For successful project outcomes	Win-Win	Willing	Preconceived success
Competitive	Reluctant or cautious	To look good	Win within rules	Shrewd	Compromise
Adversarial	Distrust	Not to lose	Win at any cost	Cut-throat	Unpredictable

Source: (Hattori & Lapidus, 2004)

Trust has been shown to increase cooperation, improve flexibility, lower the cost of coordinating activities, and increase the level of knowledge transfer and potential for learning (Nielsen, 2004).

The table below shows some enablers/facilitators of collaboration identified in two different studies.

Table 4: some enablers/facilitators of collaboration from literature

Paper	Enablers/facilitators
Enablers for collaboration in novel packaging for F&B in the Netherlands (de Schepper, n.d.)	Defining a clear strategy; proving technology works; using intermediaries; using existing networks; agile contracting; driving the process
Facilitators of good collaboration between university and F&B industry in Norway (Garnweidner-Holme et al., 2021)	Common goals; exchange of knowledge; opportunity for research funding

Why collaborate?

There are many reasons why companies would want to collaborate (in whatever form that collaboration may take). For example, business clusters can be major engines of innovation, productivity growth, and quality job creation (Auckland Unlimited, 2021; Ketels, 2017). Clusters are successful when:

- there is detailed understanding of the clustering companies' characteristics, key strengths, and shortcomings in terms of networks, technologies, and alignment with megatrends
- focused on engagement with stakeholders and developing shared goals through understanding of the main industry and technology trends, capability to recognise weak signals, building supporting culture based on cooptation,¹³ knowledge sharing, and alignment of support initiatives and policies (Auckland Unlimited, 2021).

¹³ "Cooptation" is a portmanteau of cooperation and competition. "Cooptation" refers to competitive businesses that also cooperate when it is to their advantage (i.e. compete on some things, cooperate on others).

There are benefits from business collaboration vertically (studied in food industry supply chains) due to coordination of sourcing, production, and logistical activities (Stank et al., 1999). Interfirm cooperation shifts the businesses in the supply chain from being loosely linked to coordinated enterprises which are focused on efficiency improvement (by removing redundant activities and creating a seamless flow of materials and goods) and increased competitiveness by having product more readily available (Stank et al., 1999). Coordinated operations enable higher levels of service provision as well as reduced overall costs – two goals that are mutually exclusive in traditional operations (Stank et al., 1999).

Evidence from the Italian, Hungarian, and Belgian food industries shows collaboration between supply chain members to be an important factor for enhancing innovation competence (Gellynck & Kühne, 2008). The intensity of the collaboration between supply chain members depends on the position of the members (Gellynck & Kühne, 2008).

External collaboration is an effective way for small- and medium-sized enterprises (SMEs) to improve innovation performance and obtain sustainable competitiveness (Lu & Yu, 2020). Both formal and informal external collaboration have positive effects on the innovation performance of SMEs in high-tech manufacturing in China, and informal external collaboration offers greater benefits than formal (Lu & Yu, 2020).

Why collaboration in NZ F&B is important

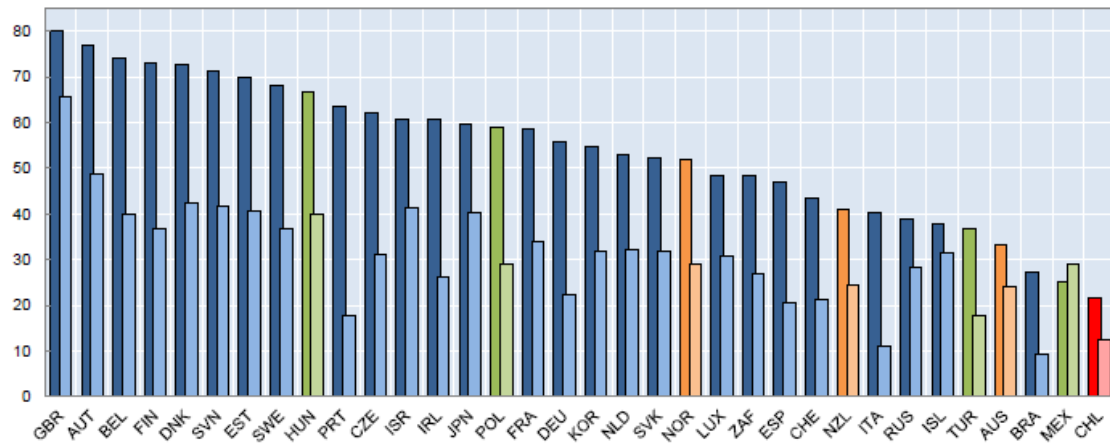
The context of the New Zealand industry is important in understanding the role collaboration can play to deliver greater success. SMEs in the F&B industry are said to be disadvantaged because the market is inherently challenging, given a small country with low population density and concentrated and duopoly-like grocery retail and foodservice distribution, small industry size, large number of competing SMEs, and a few large dominant multinationals (Auckland Unlimited, 2021).

A study of F&B in Horowhenua and Kapiti showed further that SMEs struggle because of a lack of economies of scale; something which larger companies use to manage issues with distribution of highly perishable products (Eason, 2014). The study puts forward networks and collaboration as a way for SMEs to get the appropriate scale to succeed.

Weak academic research performance and academic-business cooperation holds back innovation (OECD, 2021). There are potentially significant gains to be made for the New Zealand economy from increased collaboration, both between businesses and between academia and business.

The chart below shows the percentage of firms collaborating on innovation activities, by size, between 2008-2010 in OECD countries (OECD, 2015). The left bar for each country shows large firms, and the right bar shows SMEs.

Figure 8: Firms collaborating on innovation activities, by size, 2008-2010



Source: OECD (2013g), Science, Technology and Industry Scoreboard.

Source: (OECD, 2015)

Compared to other OECD countries, New Zealand was far behind in terms of collaboration on innovation activities, particularly for SMEs. Additionally, over half of the collaboration on innovation activities in New Zealand between 2008 – 2010 was done nationally (OECD, 2015).

There is huge scope for massive value generated from collaboration on innovation to export in New Zealand because of our relative strength in trade. In 2019 New Zealand exceeded or was closest to best performance relative to other OECD countries when considering trade facilitation (OECD, n.d., 2019). The performance of New Zealand had improved in automation of border processes and internal border agency cooperation. The areas where greatest improvement could be made are in information availability, advance rulings, fees and charges, and automation and streamlining of procedures.

Some types of collaboration in business

There are many different types of collaboration in business and a lot of different ways to classify the relationships. Some of these have overlap and could capture the same concepts but are described differently throughout the literature. Collaboration happens at all levels of the value chain and both vertically (i.e. up and down the value chain; e.g. between distributors and producers) and horizontally (i.e. side-by-side; e.g. between producers).

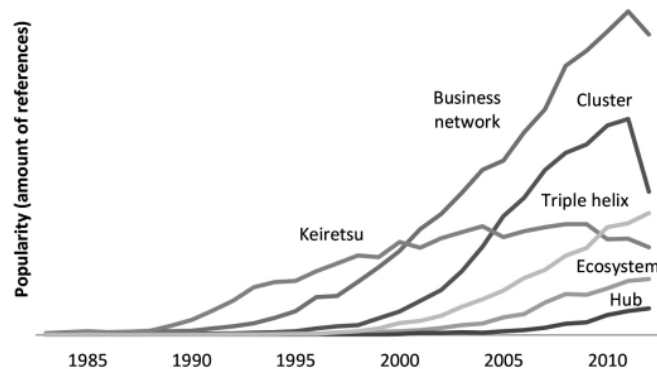
Kanter (1994) looks at collaboration in three categories: mutual service consortia, joint ventures, and value-chain partnerships.

- Mutual service consortia are the most distant types of collaboration where similar companies in similar industries pool their resources to gain a benefit too expensive to acquire alone, such as an advanced technology.
- Joint ventures, where companies pursue an opportunity that needs a capability from each of them. The venture may operate independently or might link the partners' operations.
- Value-chain partnerships, which are the strongest collaborations. This is where companies in different industries with different but complementary skills link their capabilities to

create value for the ultimate users. Commitments in these relationships tend to be high and the partners tend to develop joint activities in many functions, with operations often overlapping. The relationship creates substantial change within each partner's organisation.

The figure below shows the rise of popularity of some collaboration concepts in literature over recent history.

Figure 9: Popularity of collaboration concepts within the literature



Source: (Majava et al., 2013)

Business networks

Business networks are structures of inter-firm relationships that emerge and evolve through interactive processes, containing complex and systemic interdependent webs of relationships where companies and managers operate (Majava et al., 2013). The companies within the business network may have different types of relationships with each other simultaneously (Bengtsson & Kock, 1999). Additionally, the network members may be in different regions or countries.

The reason for a company being in a network and pursuing collaboration is to achieve common strategic and operational goals and create value for stakeholders (Auckland Unlimited, 2021; Ford et al., 2011). The position of any one company in the network depends on the nature of the direct and indirect relationships the company creates, maintains, and executes in the network (Majava et al., 2013). One paper studying craft production in the Italian food and beverage (F&B) sector found the size of the company and location of supplier are the most impacting factors other than craft production in a knowledge-sharing collaborative relationship (Fiorello et al., 2021).

Business clusters

Business clusters refer to concentrations of interconnected firms and institutions within a certain field to facilitate collaboration (Majava et al., 2013; Porter, 2000). The cluster can be formed to share knowledge; skills; R&D and innovation capacity and capability; access to service providers, capital, employees, and suppliers; networking benefits; and access to specialised information and shared vision and leadership (Delgado et al., 2014).

The certain fields that clusters can be arranged around vary. Clusters can be geographical (i.e. physical collocation), sectoral, horizontal, vertical, among high-tech companies, by historic know-how basis, factor endowment, low-cost manufacturing structures, and knowledge services (Majava et al., 2013).

Triple helix

A triple helix refers to the innovation relationship between academia, industry, and government, designed as such to foster economic and social development as well as play traditional roles in teaching and research (Etzkowitz, 2003; Galvao et al., 2019; Leydesdorff & Etzkowitz, 1998).

Triple helix structures often result in the creation of new organisations and institutions such as business incubators, venture capitalists, science parks, and collaborative research centres that can be virtual, but linked through the helix relationship. The common mission is typically driven by the government and its desires for economic and social development (Majava et al., 2013).

Arenas et al. (2013) propose that collaboration can be a triadic relationship rather than strictly dyadic relationship born through conflict, where a third party facilitates conflicting partners, mediates, and turns conflict into collaboration. In some sense, this could be seen in triple helix relationships where academia or government play a bridging role in getting buy-in from the other two parties.

Primary Growth Partnerships (PGPs) may be prime candidates for case studies of triple helix relationships with involvement from academia, industry, and government.

Ecosystem

The business ecosystem concept was first established in 1993, and was defined as:

"An economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they coevolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments, and to find mutually supportive roles (Moore, 1993, 1996)."

The logic is that companies must proactively develop mutually beneficial relationships with customers, suppliers, and competitors, and that loose networks exist that affect, and are affected by, the creation and delivery of a company's own offerings (Majava et al., 2013). The companies coevolve their capabilities around innovation and cooperate and compete to support new products, satisfy customer needs, and build succeeding innovations.

A gin producer we spoke to during our recent review of access to innovation facilities for MPI said:

"If we can work with them and give a good product, when we went to global [market], NZ would become premium product. When the tide comes in, every boat rises. We wouldn't be the ones in the lead reaping benefits, but we would all get benefits... tried to grow with the client as well. Case of introducing the rigour around quality control systems and

assurance. Didn't work for us that someone could make a product that ruins NZ reputation as a whole (Sapere Research Group, 2021)."

The example above highlights a few important things. Firstly, the gin producer recognises they exist within an ecosystem and that impacts to other gin producers within their loose network can have impacts on their own success – both positive and negative, and that there is value in supporting those around them to lift everyone up to a more successful future state. Secondly, it recognises the willingness to collaborate because of a common goal: success in the export market.

Innovation hubs

Innovation hubs focus on bringing companies to a central point and, instead of a single company being dominant, companies work together to create value (Launonen, 2011; Prahalad & Ramaswamy, 2004). Knowledge is distributed amongst many companies (not held by any one company) and companies are encouraged to take advantage of available information, use others' ideas, and share their own (Chesbrough, 2003).

The literature suggests there are necessary conditions for innovation hubs to be successful (Trott, 2016):

- An innovation continuum must exist, including basic research, idea funnelling, angel investors, talented people, and sufficient capital.
- The initial size of the innovation hub must exceed the critical size and be sufficient to allow for more companies to attach themselves to the hub.
- The rate at which companies attach themselves to the hub must exceed the rate at which talent and ideas diffuse away from the region (Suh, 2010).

Innovation hubs typically consist of public policy activity (to incentivise innovation), education and infrastructure resources and services, public-private partnerships for R&D systems, and company-driven activities such as start-up ventures (Majava et al., 2013).

During our review of access to innovation facilities for MPI we heard about Pic's Factory in Nelson and how they set up an innovation hub to encourage innovation and collaboration between start-up F&B companies (Sapere Research Group, 2021). The facility includes four 50m² collocated commercial kitchens, some warehouse space, offices, demonstration kitchens, and access to a food safety consultant with a relatively hands-off approach. It aims to promote a welcoming communal area so people from the different start-up companies can see what each other are doing and interact naturally to share knowledge and learnings. This hub, or others, may provide useful case studies of the environments that are / are not conducive to collaboration, and if and how partaking in this environment contributes to collaborative success.

Open innovation

Open innovation is a business management model where companies do not just rely on their own internal knowledge, sources, and resources (e.g. their own staff or R&D capacity and capability) for innovation of products, services, business models, processes, etc. (Chesbrough, 2003, 2012;

Chesbrough & Bogers, 2014). Instead, companies also use multiple external sources such as customer feedback, published patents, competitors, external agencies, and the public to drive innovation.

This is different from normal organisational culture that is siloed and guards R&D and innovation with secrecy for fear of losing competitive advantage from being open. The open innovation model that encourages collaboration becomes viable when the company acknowledges that there are many valuable resources outside the organisation (Chesbrough, 2003, 2012; Chesbrough & Bogers, 2014).

Chesbrough (2003, 2012) defines two terms of open innovation:

- Inbound innovation, which is about sourcing expertise from outside the company and scanning the external environment for new information to identify, select, utilise, and internalise ideas.
- Outbound innovation, which is the purposive commercialisation and capture of internally developed ideas in the organisation's external environment. This might be through selectively revealing a product to journalists and reviewers or selectively selling the technology or service to customers with a view to getting feedback.

Companies implement open innovation practices in different ways such as alliances, research chairs in universities, crowdsourcing competitions, and innovation ecosystems.

In our recent project for MPI reviewing access to innovation facilities we heard from a domestic gin producer that their operation size and demand was not big enough to sustain any one botanical growers' operation and there was hesitancy around the efficacy of growing botanicals domestically (Sapere Research Group, 2021). This hesitancy would likely be because no single grower would want to make the significant investment into the research for other growers to then free ride off the findings. As a reaction, the gin producer worked with a university to publish open-source research studying the efficacy, and now states there are numerous growers in New Zealand growing botanicals (presumably because of the research being published and the evidence becoming clear).

Informal networking

Not all forms of network and collaboration are formalised. For those that are, some start as informal arrangements between companies, which then develop into formalised relationships for sharing knowledge and developing the shared knowledge base (Macdonald, 1992; Martin-Rios & Erhardt, 2017).

For example, knowledge transfer between university and industry in Australia is driven only partially by formal (research centres, incubators, contract-research and commercialisation) channels of engagement (Dang et al., 2019). Successful knowledge transfer also relies on informal (internships, mentoring, industry talks, transdisciplinary research platforms, collaborative PhD programmes, and industry training programmes) channels (Dang et al., 2019).

In our recent access to innovation facilities project for MPI, we heard across different industries that industry sometimes use postgraduate students and internships as opportunities for more informal routes of collaboration with universities (Sapere Research Group, 2021). Although it is not a fully contracted relationship, industry get access and share knowledge with university through both the student and their supervisor.

Challenges to collaboration

There are many challenges to collaboration which are well-evidenced in the literature, both domestically and abroad.

For example, a case study of the Thailand Science Park, established for knowledge sharing and proximity benefits, showed that close proximity does not guarantee collaboration and the companies collocated within the park did not collaborate, likely due to political settings (Ruokolainen & Igel, 2022).

The experiences of industry and universities in Norway conducting nutritional research and food development show prejudices with the food industry's goals (likely university-side issue) and previous experiences of time-consuming projects (likely industry-side issue) are barriers to collaboration (Garnweidner-Holme et al., 2021).

A recent study of Auckland F&B manufacturers found multiple barriers for lack of collaboration:

- With little history of productive collaboration, there appears to be a lack of collaborative skills and structures. There is a lack of understanding about norms, values, capabilities, and the effective formal structures that can enable collaboration.
- Networks currently in place mean general lack of trust or willingness to share knowledge, as most SMEs see collaboration as a threat to their know-how or competitive position.
- Most F&B manufacturers focus on domestic markets, fuelling high levels of rivalry that act as a barrier to collaboration and knowledge sharing.
- As opposed to larger overseas markets, sizeable local F&B manufacturers and multinationals are not fully utilising their resources and capabilities to provide knowledge and capital to ignite collaboration within the sector, and for productive knowledge spillovers.
- The prevailing approach to regional economic development in New Zealand is for Government and public institutions to focus on the reduction of obstacles to doing business over a more coordinative role, with little attempt to instigate collaboration (Auckland Unlimited, 2021).

The Auckland Unlimited (2021) study also found that there are many supporting organisations for F&B development in Auckland (Callaghan, FoodBowl, NZTE), however they do not collaborate amongst themselves – consistent also with recent Productivity Commission findings (New Zealand Productivity Commission, 2021). Amongst this is also a lack of clarity and knowledge of “who is who” within the landscape, particularly for SMEs and start-ups who find it hard to navigate. This was echoed in our recent report for MPI reviewing access to innovation facilities by F&B companies (Sapere Research Group, 2021). The study said supporting organisations within the industry treat each business as individual entities and do not connect companies that may benefit from collaboration (Auckland Unlimited, 2021).

A study of the Swedish food industry found two main types of barriers to collaboration:

- Technical – lack of technical expertise in food manufacturing, a requirement for legal framework for collaboration, and difficulty in predicting future needs for their own business.
- Imperative – lack of trust, scepticism about new tech, and conflicts of interest, with trust being the major barrier (Bombaywala, 2014). Trust was also raised as a barrier in analysis of SMEs in the US (Besser & Miller, 2010).

Analysis of collaboration in novel packaging in the Dutch F&B industry found conflicting interests/conditions, resistance from competitors and/or customers, different sized companies, limited pool of companies to collaborate with, and the need for retailer approval as key barriers (de Schepper, n.d.).

Collaboration in the supply chain of agri-food is often constrained to operational issues and logistics-related activities, which can limit the effect it has on outcomes (Matopoulos et al., 2007).

An OECD report in 2016 found that the biggest barriers to in-country shared value creation were lack of mutual trust of collaborating parties, asymmetry of information, and insufficient coordination among all parties involved (OECD, 2016).

Unproductive competition

It is difficult to pin down a definition of unproductive competition, and there is little literature exploring it in depth. The literature that does exist focuses on measures of surplus (Guerra et al., 2019).

From our recent project for MPI we have an example where competition might be considered unproductive and may inform the refinement of our definitions or what case studies we want to pursue (Sapere Research Group, 2021). A representative of a government innovation support organisation told us of the lack of unified strategy for how NZ Inc. goes about innovation and making F&B products, meaning facilities compete against each other to provide services, are not complementary, not fit for service, and ultimately do not serve a common goal.

Stakeholders also suggested there is competition in foundational research/innovation, with companies individually contributing significant resource to conduct basic science with no IP outcomes (Sapere Research Group, 2021). It may make more sense for companies to pool resources and collaborate on foundational research/innovation activities to fast-track their personal business development process and get to the stage of being able to apply their resources to activities that actually generate IP and value.

There may be some interesting case studies in the nutraceutical industry given:

- Nutraceuticals require publication of findings of studies to verify the claims they make.
- There is likely a free rider problem in the market, since competitors could wait for a company to invest significantly and publish findings and then use those findings to validate their own product without any investment costs.
- There may be benefits to collaboration in the foundational research of nutraceuticals, allowing nutraceutical companies to fast-track their business development and creation of

IP and value (i.e. can collaborate in foundational research and then compete in market offerings).

Some OECD guidance

Multiple OECD papers have been published that give insight into ways government can help to improve the nature of collaboration within their country.

One example is Business Finland, a national support agency which helps companies find business partners, creates business networks, and develops plans and actions for renewal, funding projects and ecosystems that it deems the best (OECD, 2021). Business Finland is targeted at developing business ecosystems as a network of firms and organisations aiming for international success and is about getting them to form common goals and seek solutions to common problems.

Similar agencies in the Czech Republic, France, and Spain have roles in supporting the development of alliances and business relationships, and reflect the observed importance of network and links in stimulating collaboration and innovation (OECD, 2009).

OECD have also proposed a framework for the sequencing of activities by government to enable integrated policy making alongside the formulation and implementation of collaboration strategies between public and private organisations for extractive projects (OECD, 2016). While this is about extractive projects, it may be transferable to wider settings. The main points of the framework are:

- Adopt a comprehensive long-term vision and implementation strategy to build competitive and diversified economies and create in-country shared value out of natural resources.
- Build an empirical basis to inform decision-making through inclusive participatory process.
- Unlock opportunities for in-country shared value creation by investing in the local workforce and supplier development, as well as shared infrastructure.
- Support and contribute to innovation leading to new products and services.
- Establish effective and transparent monitoring and evaluation systems and regularly review the collaboration strategy.

The paper further discusses what host governments can do to help with public-private partnership in extractive projects, however again this is likely applicable more generally:

- Improve the investment climate; assess ease of doing business in country. Strengthen the enabling conditions for business development such as removing trade and investment barriers and addressing other constraints such as those identified in World Bank report on ease of doing business. Capital investment flows could be interesting to look at, particularly given New Zealand has a big focus on investment in property rather than other productive assets.
- Develop plan for inclusive local workforce and supplier participation.
- Promote transparency, including clearly communicating if and how factors such as local employment, procurement, skills upgrading, training, and tech transfers are factored into tender evaluation processes.
- Facilitate linkage of multinational firms with local firms, particularly in SMEs.

The National Linkage Programme (NLP) in Ireland was also studied as a success story to provide Moldova with some recommendations for implementing something similar. The NLP is a government implemented support programme that promotes supply chain linkages between local food producers and supermarkets, specifically by providing a platform for interaction between food producers and retailers, and lifting local producers to be able to supply to large retailers (OECD, 2020). This includes identifying and contacting suppliers and retailers, conducting business development reviews, providing training and one-to-one coaching for local producers, matchmaking of producers and retailers, and follow up of the partnership. In the OECD report, the recommendations were:

- For the Moldovan government to implement targeted programmes to enhance supply chain linkages between processors and retailers by:
 - Building of databases and registries that capture detailed information on local SMEs, made publicly available so it is easily visible.
 - Provide business matchmaking services to facilitate supply chain linkages.
 - Fill gaps by testing and increasing capabilities of local suppliers (OECD, 2020).

While all these programmes serve slightly different purposes, they illustrate the potential mechanisms the New Zealand government could implement to bring collaborative partners together.

About Sapere

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