# The Governance of Value Creation and Capture in Agri-Food Supply Chains: A Conceptual Framework, Propositions and Protocols


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# Abstract

The concept of value is central to business operations and how the process of value creation and value capture is managed is a critical success factor to the performance of supply chains. There are various modes of chain wide governance which attempt to facilitate value creation and capture. However, while the concept of governance has been well researched at the internal and bilateral exchange level, the governance literature at the systems level is somewhat sparser. Hence, the objective of this research is to explore the relationships between value and collaborative governance at the network level. We offer a conceptual framework which highlights the decision making process of the focal firm in order to create and capture value under a network governance schema. The contribution being a multi-level view of value, allowing for further research to take place at the internal, bilateral and systems level of the supply chain. Further, we derive a series of primary and supporting value chain attributes that are said to facilitate network governance, value creation and capture. We offer a series of propositions for further testing relating to the value chain attributes of; market orientation, information enrichment, aligned incentives, channel leadership and integrated collaborative network governance. These are supported by the attributes of; co-creation, resilience, adaptability, and brand ownership and control. We argue that this holistic view of value chains add to the sparse end-to-end value chain governance literature and will be useful for practitioners wanting to enhance value creation and capture.

**Keywords:** value creation, value capture, network governance, value chain, conceptual framework

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# 1. Introduction

This current report follows on from the groundwork established by the AERU White Paper (Saunders, et al., 2016) that examined how value chains create and share value to incentivise land use practices for New Zealand agricultural producers. The White Paper and this current work are part of the Integrated Value Chains multi-year project funded by the Our Land and Water National Science Challenge. This project seeks to test the hypothesis that the more collaborative a value chain is, the greater the value that New Zealand producers, processors, and manufacturers in the land and water sector can capture from profiling the desirable 'credence attributes' of its production systems ('the New Zealand story'), targeted at consumer segments. In order to understand the factors that drive collaborative value chains, it is important to first understand the processes of value creation and value capture and, in particular, how these chain wide processes can be governed. The objective is to understand the mechanisms of collaborative network governance and the particular value chain attributes that drive value creation and capture in the New Zealand agriculture industry.

Indeed, in light of stagnating or, even declining domestic markets of most large-scale food processing agribusiness firms across the globe, striving for adding value through increased market orientation has become the predominant strategy of choice. With research showing this being a chain-wide rather than firm-internal task (Grunert, et al., 2005), the importance of not only understanding the mechanisms of value creation (how do we increase the size of the cake, i.e., the total value in the chain), but also of value capture (i.e., how do we slice the cake?) is highlighted. A chain or, 'systems' view of value capture, is usually associated with a long-term perspective of collaboration and mutual dependence which should span the whole value chain (VC) (Gereffi, 1995; Grunert et al., 2005).

The predominant focus of empirical research in this field however, still focuses on bilateral (dyadic) exchanges and particularly the farmer-processor-link, rather than whole value chains (Trienekens, Van Velzen, Lees, Saunders, & Pascucci, 2017). However, some attempts such as the 'Netchain' concept proposed by Lazzarini et al. (2001) to address this have not progressed far in empirical research. This approach suggested that not only dyadic, but chain-spanning vertical, and also horizontal linkages, would have to be taken into account to fully understand value chain performance. Rare examples of such research include Loader (1997), who studied governance mechanisms used along the export chain of Egyptian potatoes into the UK retail market with a qualitative approach, Gellynck, Kuehne & Weaver (2011), who studied relationship quality and innovation capacity across three stages of 90 food chains, or Ng, Sonka & Westgren (2003), who used an agent-based modelling framework to investigate co-evolutionary processes in supply chain networks across three stages of a supply chain.

We note that value creation and value capture are two unique, yet intertwined terms central the concept of the value chain, which suggests that the final consumer is the arbiter of value (Lepak, Smith, & Taylor, 2007; Sausman et al., 2015). Firm activities should be directed towards meeting those consumer demands in order to generate profits, which are then appropriated by chain actors. This requires an understanding of the final consumer and hence, various customer value frameworks have been developed in the field of marketing in an attempt to explain both the objective and affective factors which impact the purchase decision. These signals direct the actions of the firm

which include the internal processes and the collaborative activities that take place between partners. To ensure these activities are well managed, governance is a critical success factor in determining the value outcomes achieved by chain actors.

Much of governance literature is focused on the internal or bilateral chain level, with the internal literature exploring issues of organisational structure and management of internal operations (Weir, Laing, & McKnight, 2002). The bilateral level has been extensively investigated, and several typologies have been developed which describe the various governance arrangements firms enter into (see for example, Gellynck, & Molnár, 2009; Peterson, Wysocki & Harsh, 2001; Williamson, 1991). However, value creation and capture take place not only at the bilateral level, but as firms exist within a wider system, it is important to understand the governance modes that overlay all the bilateral exchanges. Further, the typologies that exist at the dyadic level are not necessarily adequate to explain the governance structures instituted by network members. Here we find that the 'global value chain' (GVC) and 'network' literature provide additional explanations. The GVC literature has a heavy focus on the role of power (Gereffi, 1995), while the network literature on structure of connected relationships to coordinate value creation (Provan, Fish, & Sydow, 2007). However, despite the importance of collaborative governance to value creation and value capture at the supply chain system level, there is a lack of research that explores end-to-end chain governance models (Trienekens, Van Velzen, Lees, Saunders, & Pascucci, 2017).

Given this shortcoming, the objective of this research is to examine how the process of value creation and capture is affected by the collaborative governance structures adopted at the various levels of the supply chain system. Hence, this report seeks to answer the following questions:

- How does bilateral level governance facilitate value creation and value capture?
- How does network level governance facilitate value creation and value capture?
- What are the key attributes of a value generating value chain?

To answer these questions, we provide a brief discussion on value creation and value capture, before approaching the issue of governance from a broad view of the extant literature. We introduce a conceptual framework of the focal firm's governance decision making process to create and capture added value in the value chain. The conceptual framework developed in this research contributes to the exisiting literature through the introduction of a generic framework that may be applied to, and cover various supply chain levels. This allows research to take place using different units of analysis to develop an end-to-end chain view of governance within the supply chain. Next we review the ideas of value creation and capture.

# 2. Value Creation and Value Capture

Value is a central notion in strategic management and several authors suggest that the delivery of value to the end customer is the reason for a firm's existence (Heinonen, Strandvik, & Voima, 2013; Lepak et al., 2007; Slater, 1997). The concept can be viewed as two unique, yet intertwined terms: value creation, and value capture. The distinction between the two has been made clear in the strategic management literature where it is recognised that the organisation whom creates the value will very rarely capture all of it. Instead, often they will lose a share to other stakeholders of the VC (Lepak et al., 2007). Value creation may be defined as a process which leads to an increase in "…the customer's well-being, such that the user becomes better off in some respect" (Grönroos & Voima, 2013, p. 134). In contrast, value capture is "the net value that a focal firm claims successfully" (Wagner, Eggert, & Lindemann, 2010, p. 841). The former is concerned with firm/chain processes and activities, whilst the latter is focused on the appropriation of profit between partners. This report will further explore the juxtaposing of value creation and capture as follows.

## 2.1. Value Creation

Value is created by organisations in a variety of ways, and two dominant research streams have developed regarding value creation: goods and services value, and relationship value (Lindgreen & Wynstra, 2005). The first of these, goods and services value, is concerned with the benefits and sacrifices of purchase and consumption (Zeithaml, 1988). The organisation's ability to create value and maximise the net benefit for the consumer is largely contingent upon two factors: the firm's understanding of the consumer, and their ability to leverage capabilities and resources (O'Cass & Sok, 2013). Other authors describe this as possessing a 'market orientation', which may be defined as "…the extent to which an actor in the marketplace uses knowledge about the market, especially about the customers, as a basis for decision-making on what to produce, how to produce it, and how to market it" (Grunert et al., 2005, p. 428).

The 'actual' behaviour of the focal firm and other chain actors result in value outcomes for both the chain actors, and the end consumer. Drawing from value theory, we distinguish these as value-in-exchange and value-in-use, respectively (Gordon, 1964). Value-in-exchange is viewed as the market price of a product, contingent upon the costs of production and scarcity, and perceived value-in-use is derived from the user's perceptions of productivity, or utility (A. Smith, 1784). Both forms of value are important as they provide feedback to the firm in terms of the appropriateness of governance practices and incentives, but also highlight any value perception misalignments between the consumer and the product offering, a key factor of customer satisfaction and loyalty (Smith & Colgate, 2007). Firms then adapt or reconfigure their behaviour, driven by the goal of achieving greater value outcomes, hence, highlighting an iterative ongoing process within the VC.

In order to achieve a market orientation, a comprehensive understanding the final consumer is required. Indeed, several frameworks have been developed which highlight the multidimensional nature of value in identifying the various preferences that consumers may hold, and a summary of these can be found in Table 1 below. These frameworks include a mix of objective components such as price and quality, and subjective dimensions such as affective or hedonic responses. Although these frameworks help organisations better understand value and their own role in creating this, Smith and Colgate (2007) suggest that there is little consistency across earlier typologies, and they lack the relevant information to aid in market strategy development. The authors proceed to

introduce their own typology, suggesting that there are four types of value: functional (quality), experiential (affective), symbolic (social), and cost. In addition to this, they take a VC view to illustrate that value adding processes take place both within and between organisations, suggesting that there are five sources of value: information, products, interactions (with employees and systems), environment (purchase and consumption), and ownership/possession transfer. The notion of value creation taking place in the context of a system is also highlighted in the work of Dagevos and van Ophem (2013), who propose a customer value framework in the context of agri-food consumption.

*Table 1 A summary of consumer value frameworks.*

| Author | Dimensions | | Context |
|---|---|---|---|
| Sheth, Newman, and Gross (1991) | • Emotional<br>• Functional<br>• Conditional | • Social<br>• Epistemic | Good/service (generic) |
| Holbrook (1999) | • Efficiency<br>• Excellence (quality)<br>• Status<br>• Esteem | • Play<br>• Aesthetics<br>• Ethics<br>• Spirituality | Good/service (generic) |
| Babin and Babin (2001) | • Hedonic (excitement, shame, and romance) | • Utilitarian | Retail goods (women's apparel) |
| Sweeney and Soutar (2001) | • Emotional<br>• Social | • Functional (price and quality) | Durable goods at a brand level |
| J. B. Smith and Colgate (2007) | • Functional/instrumental<br>• Experiential/hedonic | • Symbolic/expressive<br>• Cost/sacrifice | Good/service (for use by practitioners) |
| Dagevos and van Ophem (2013) | • Product<br>• Process | • Location<br>• Emotional | Fast moving consumer goods (agri-food) |
| Carlson, Rosenberger III, and Rahman (2016) | • Functional (installations, professionalism, quality, price, major event and, event destination tourism infrastructure) | • Social<br>• Hedonic<br>• Epistemic<br>• Monetary<br>• Convenience | Service (travel experience) |

Source: Authors

As firms exist within a system, value is also created when firms pool knowledge and skills to better meet the needs of the of the end customer, thus generating higher profits than would otherwise have been possible. Additionally, when firms engage in repeated transactions stability is fostered and transaction costs are reduced, while relationship development is promoted (Fischer, 2013). Information sharing is promoted as each actor engages in trusting and committed behaviour, which in turn, increases integration along the supply chain as visibility is improved and firms receive real-time information to aid in decision making (Li, Ye, & Sheu, 2014). Moreover, some researchers suggest that the greater the supply chain integration, the greater the cohesiveness and subsequent value creation of the chain as objectives and processes within the system become increasingly aligned (Bryceson & Slaughter, 2010; Tan, 2002). Hence, the value creation that takes place within the VC is contigngent upon an understanding of the final consumer, product offering atttributes, production processes, and communication between actors. Once value is created, the key issue becomes who captures the profit, and the dicussion now turns to an exploration of value appropriation.

## 2.2. Value Capture

As firms create value, it is axiomatic that they attempt to capture that value. Indeed, the amount of value that a firm is able to capture is mediated not only by the governance mechanisms that exist between partners, but also the isolation mechanisms and frictions whose source may be either endogenous or exogenous to the chain. Isolation mechanisms are "…any knowledge, physical, or legal barrier that may prevent replication of the value-creating task, product or service by a competitor" (Lepak et al., 2007, p. 188). In this sense, isolating mechanisms provide organisations the opportunity to leverage their unique position and appropriate greater value. For example, in terms of the product offering, intellectual property rights are a key knowledge barrier that can be used to prevent product imitation within the market place (Duhamel, Reboud, & Santi, 2014). There are a range of potential isolating mechanisms discussed, including factors such as those related to the product (Subramani & Venkatraman, 2003; Williamson, 1975), exchange relationships (Lages, Lages, & Lages, 2005), and the network structure (Gereffi, Humphrey, & Sturgeon, 2005; Hearnshaw & Wilson, 2013).

In contrast, frictions are seen as a source of value leakage, or destruction, where other actors who did not create value are able to capture a share of the profit, even those outside of the chain. Chatain and Zemsky (2011, p. 1206) define these as "…incomplete linkages in the industry and VC that keep some parties from meeting and transacting", and identify three key factors that hinder trade: search costs, transaction costs, and barriers to trade. Organisations accrue search costs when they expend resources in the search of a new business partner, and incur transaction costs in the negotiation and execution of partnership agreements (Williamson, 1975). Where firms are fearful of a hold-up problem, or operate in an uncertain environment they will face higher costs as the conditions surrounding an exchange are unable to be fully specified and firms must spend more on ongoing negotiations surrounding the exchange relationship (Grover & Malhotra, 2003). Barriers to trade refer to the external regulatory environment, namely international trade barriers (Chatain & Zemsky, 2011), which are set up by countries to allow their domestic producers to capture value which would be lost to competitors from countries with more favorable natural and/ or regualtory environment for the prodcution of a good or service. Trade agreements and efforts to integrate

national markets are effective ways in which to encourage trade as buyers are able to consider a wider variety of suppliers with which to partner with, whilst simultaneously risks and transaction costs.

A key factor in how value is created and captured are the governance mechanisms employed in the VC. As this research is directed towards how value is created both bilaterally and in the network, we concentrate on the exchange that takes place between firms (bilateral) and the network of firms that comprise a discrete supply chain. Interestingly, while bilateral exchange is well served, governance research on end-to-end chains is relatively sparse (Trienekens et al., 2017). However, a necessary starting point is bilateral exchange and this will lead into a review of network governance. Following this, a conceptual framework is offered and discussed.

# 3. Bilateral Exchange

Bilateral exchange governance refers to the management and organisation of the exchange relationship, or the "…institutional matrix within which transactions are negotiated and executed" (Williamson, 1979, p. 239). Within the literature, bilateral exchange has been extensively researched and several relationship typologies have been developed to describe the range of governance options available to organisations. These are summarised in Table 2 below.

*Table 2 Summary of bilateral exchange typologies*

<table>
<tr><th>Author</th><th colspan="12">Typology</th></tr>
<tr><td>Williamson (1991)</td><td>Spot market</td><td colspan="10">Hybrid</td><td>Vertical integration</td></tr>
<tr><td>Webster (1992)</td><td>Transactions</td><td>Repeated transactions</td><td colspan="3">Long-term relations</td><td colspan="2">Buyer-seller partnership</td><td colspan="3">Strategic alliance (incl. joint venture)</td><td>Netwo-rk</td><td>Vertical integration</td></tr>
<tr><td>Peterson et al. (2001)</td><td>Spot/cash market</td><td colspan="3">Specifications contract</td><td colspan="4">Relation-based alliance</td><td colspan="3">Equity-based alliance</td><td>Vertical integration</td></tr>
<tr><td>Raynaud, Sauvee, and Valceschini (2005)</td><td>Spot market contract</td><td colspan="2">Relational (or implicit) contract</td><td colspan="3">Relational contract with approved partner</td><td colspan="3">Formal contract</td><td colspan="2">Equity-based contract</td><td>Vertical integration</td></tr>
<tr><td>Schulze, Spiller, and Theuvsen (2007)</td><td>Spot market</td><td colspan="2">Long-term partnerships</td><td colspan="3">Marketing contracts</td><td colspan="3">Production contracts</td><td colspan="2">Contract farming</td><td>Vertical integration</td></tr>
<tr><td>Gellynck and Molnár (2009)</td><td>Spot market</td><td colspan="2">Non-contractual</td><td colspan="3">Contractual relationship</td><td colspan="3">Relation-based alliance</td><td colspan="2">Equity-based alliance</td><td>Vertical integration</td></tr>
</table>

Source: authors

Typically exchange occurs on a multidimensional continuum ranging from spot market transactions at one extreme, to total ownership (vertical integration) at the other, with a particular governance form selected in response to organisational needs, product needs and the external environment (Zhang & Aramyan, 2009). Most exchange sits within these polar bounds and may be classified as hybrid (neither pure market, nor pure ownership), and are established using a combination of both formal and informal governance mechanisms. The relationship depth (operational, tactical, and strategic), width (simple through to complex supply chain activities), and number of actors engaged (two or more, upstream-downstream), as highlighted by Matopoulos, Vlachopoulou, Manthou, and Manos (2007) provides a distinction of the 'intensity' of collaborative exchange. Formal contracting can become cost prohibitive in terms of complexity and inflexibility (Dwyer, Schurr, & Oh, 1987) and are necessiarly 'incomplete' (Williamson, 1991). Hence, as exchange relationships move from spot market transactions towards more collaborative arrangements, purely contractual relations give way

to normative behaviours such as trust, commitment, and dependence (Peterson et al., 2001; Raynaud et al., 2005; Williamson, 1991). The more intense the collaborative action, the more the relationhship jointly depends upon normative and social behaviours to discourage opportunistism such as underserved value appropriation and coercive power use as examples.

The large body of bilateral (buyer/suppler) governance literature can be grouped into two schools of thought, the rational and the relational (Wilson, 2006). The rational school utilises economic theory that emphasises the self-interested nature of actors, utility maximising, bounded rationality, opportunism, moral hazards, and adverse selection problems (Eisenhardt, 1989; Williamson, 1985). Minimising transaction costs is a central concern of this school and is critical when considering value appropriation and the impact of value leakage to other actors. Here, Transaction Cost Economics (TCE) and Agency theory (AT) offer useful theoretical lenses with which to investigate governance choice. Indeed, governance under this school emphasises contracts, power, and other formal arrangements that attempt to mitigate the assumed opportunism of partners. Henceforth, risk adverse actors attempt to transfer risk and costs to their exchange partners, and attempt to control their 'behaviour' through a number of contract forms.

Bogetoft and Olesen (2002, pp. 186-187) suggested that in order for a contract to be comprehensive it must have three considerations:

1. co-ordination: to ensure that the rights products are produced at the right time and place;
2. motivation: to ensure that the parties have individual incentives to make co-ordinated decisions;
3. transaction costs: to ensure that co-ordination and motivation are provided at the lowest possible cost

Thus, highlighting the importance of formal arrangements in the value creation and value capture processes as the contracting schema acts as a form of isolating mechanism. Contracts guide the coordination that is critical for product and information flows, while incentives ensure that process flows throughout the chain are aligned. This school places its focus on determining the correct form of governance for each type of exchange transition, but assumes economic rationality of all actors and hence has been heavily criticised as lacking a view on the socialisation and the relational components of exchange governance.

While the rational school provides a framework with which to safeguard against opportunistic behaviour in the context of market forces, it fails to adequately capture the social nuances of exchange relationships. In contrast, the relational school explores where behavioural norms dominate, and mediate the relationship patterns and expectations that emerge from reciprocity. In this sense, Relational Exchange theory and Social Capital theory become useful theoretical lenses, where mechanisms such as trust, commitment, joint action, and cooperation become key safeguards against any opportunistic behaviour surrounding value capture (Dwyer et al., 1987).

Wang and Wei (2007, p. 650) suggest that "…trust requires partners to perceive each other as trustworthy, and willingness to forgo opportunistic behaviour". Morgan and Hunt's (1994) trust-commitment theory suggested that commitment and trust lead to cooperative behaviours that promote marketing success, rather than a firm's use of coercive power in order to condition and control the value capturing actions of others. Joint action requires parties to carry "…out the focal activities in a cooperative or coordinated way" (Heide & John, 1990, p. 25) and helps to improve

participative management of the relationship, as well as playing a central role in cooperative strategy (Dyer & Singh, 1998; Wang & Wei, 2007). The relational school, while not ignoring economic incentives, argues that opportunistism can be mitigated through trust and commitment and forms of collective sanction (see the 'Clan behaviour' of Ouchi, 1980). Here, reciprocity and collaboration between actors is the focus and this school argues that trusting relationships can indeed reduce risk, uncertanity and hence transaction costs. It is argued that collaboration is a ligitimate form of goverence in its own right (Matopoulos et al., 2007).

The theory base for bilateral exchange is indeed rich and has been extensively covered. However, while bilateral echange is a core activity within any supply chain, it does not capture the informal social structures that exist within and across the supply chain system as a whole (Jones, Hesterly, & Borgatti, 1997; Wellman, 1991). Indeed, trying to understand the difference governance mechanisms that exists to control the extended network of a supply chain is fraught. It is argued below that bilteral forms of goverence do not translate well to network goverenance. Hence, we now examine the supply chain at the systems level which attempts to encapsulate the end-to-end governance of value chain networks.

# 4. A Systems View of Exchange

A system's view of exchange looks outside of the bilateral arrangements between organisations to the wider product channel or network. In order to maximise value creation, moving beyond the bilateral exchange is important. Indeed, Harland (1996) suggested that supply chain management is built upon four tiers: the internal supply chain, the dyad, the chain, and the network. The chain is embedded in the wider network and represents the product channel, while the network denotes the wider environment to include relationships with actors outside of the direct channel (Braziotis, Bourlakis, Rogers, & Tannock, 2013). Both of which are crucial elements of the value creation and value capture process. Hence, this section explores the governance of global value chains (GVC) and networks.

## 4.1. Global Value Chains

Value chains may be defined as "…the full range of activities which are required to bring a product or service from conception, through to the intermediary phases of production, …delivery to final consumers, and final disposal after use" (Kaplinsky, 2000, p. 121). The emphasis of the VC literature being a common vision, collaboration, value creation and customer needs, with a heavy emphasis on the final consumer's role in the supply chain (Fearne, Martinez, & Dent, 2012). Kaplinsky (2000) suggests that in order to analyse these chains, there are three important components to note: VC's are repositories for rent, chains arise from systemic as opposed to point efficiency, and they involve some degree of 'governance'. The first of these components refers to barriers to entry and rent, whereby actors capture supernormal profits through the implementation and exploitation of isolation mechanisms that act as barriers to entry for competitors (Lepak et al., 2007). A shift from point to systemic efficiency denotes the change in the business environment where competition is no longer concentrated amongst firms, but rather between VC's (Grunert et al., 2005; Spekman, Kamauff Jr, & Myhr, 1998). This highlights the need for the division of labour to be effectively managed so that chains are efficiently coordinated and hence, governance is a central concept within the VC literature (Maglaras, Bourlakis, & Fotopoulos, 2015; Pilbeam, Alvarez, & Wilson, 2012; Sturgeon, Van Biesebroeck, & Gereffi, 2008). Yet, we note the scarcity of articles that deal explicitly with trying to determine the forms of chain wide governance.

One of the key articles in this stream of literature is Gereffi (1995, p. 133) who define the governance of GVC's as the "…structure of authority and power relationships between firms that determines how financial, material, and human resources are allocated and flow within a chain". Further, Gibbon, Bair, and Ponte (2008) suggest that the strategising and decision making by certain actors within the chain leads to the institutionalisation of processes as particular forms in other actors. This is highlighted in the end-to-end GVC typology introduced in a later article by Gereffi et al. (2005) which identifies five governance types. The choice of each governance structure being underpinned by the required complexity of information and knowledge transfer, and the extent to which this may be codified, and the capabilities of suppliers. These five forms of chain wide governance are:

1. <u>Market</u> – exchange is controlled by the market. Repeat transactions may take place and switching costs are low for both parties;
2. <u>Modular</u> – products are made to customer specifications. However, value is created internally by the turn-key supplier, limiting transaction specific investments;

3. Relational – increasing complexity results in mutual dependence and asset specificity between members. Value is created and captured through spatial proximity of chain linkages, and normative behaviours developed over time;
4. Captive – a high degree of monitoring and control is exhibited by lead firms. Small suppliers are dependent on larger buyers and face high switching costs, hence, they are held 'captive' in these chains;
5. Hierarchy – a vertically integrated governance structure, with a top-down approach to management, both internally and between the organisation and subsidiaries.

Except for pure market chains, the lead firm has a crucial role in the other models of governance, acting both as a gatekeeper to VC participation, and as a facilitator of value creation in terms of when, where, how, and by whom value is added (Gereffi & Lee, 2016). The current VC literature suggests that in general, power within the chain is concentrated downstream, lying with firms closest to the final consumer (Konefal, Mascarenhas, & Hatanaka, 2005). Large retailers, such as supermarkets, typically hold high levels of power over suppliers due to their scale, and may tightly control specifications using different sources of power (Brito & Miguel, 2017; Ponte & Sturgeon, 2014). Hunt and Nevin (1974) distinguished two main sources of power, 'coercive' and 'non-coercive' forms of power (reward, expertise, legitimacy and referent), and Nyaga, Lynch, Marshall, and Ambrose (2013) suggest that the use of power will affect the adaptive and collaborative behaviour of partners as there is greater potential for opportunistic behaviour by the more powerful partner. However, Brito and Miguel (2017) caution the use of this perspective as empirical work in this area is still not yet conclusive. Moreover, the research on power dynamics and opportunism is focused on the dyadic exchange level, and despite some more recent research, the end to end-to-end chain governance literature still remains relatively sparse (Trienekens et al., 2017). Hence, we move on to discuss the other way chain wide governance has been conceptualised, namely networks.

## 4.2. Networks

The term network is widely used within the management literature, and there are many different definitions and distinct use of terms which may be distinguished. Aside from alternative terms for the concept 'network', different types of networks are also present in the literature (see for example: Kähkönen & Lintukangas, 2012; Kowalkowski, Witell, & Gustafsson, 2013; Lazzarini, Chaddad, & Cook, 2001). Jones et al. (1997, p. 911) in their general theory of network governance, refer to it as "…coordination characterized by informal social systems rather than by bureaucratic structures within firms and formal contractual relationships between them – to coordinate complex products or services in uncertain and competitive environments". Along that line, Provan et al. (2007, p. 481) suggest that the themes across conceptualisations are consistent, often citing "…social interaction, relationships, connectedness, collaboration, collective action, trust, and cooperation". Broadly, networks may be defined as "…a set of nodes and the set of ties representing some relationship, or lack of relationship, between the nodes" (Brass, Galaskiewicz, Greve, & Tsai, 2004, p. 795). With 'nodes' representing actors, and 'relationships' being unconstrained, but typically involving information, social, financial, and product flows (Hearnshaw & Wilson, 2013). A brief summary of definitions may be found below in Table 3.

Indeed, this stream of VC literature examines networks from a sociological perspective and has little or nothing to say about the properties of the network as a whole. Its tools and theoretical approaches limit the analysis to socio-economic variables and has real problems in determining the complexity of a network. Yet, different approaches to studying network properties can be found in ecology, physics and mathematics (Pathak, Day, Nair, Sawaya, & Kristal, 2007). This stream of literature examines whole network topologies (not bilateral) to determine their physical and mathematical properties and provides insights into the behaviour of network as a whole, something the relational network literature lacks. Indeed, a number of recent authors have attempted to bridge this gap by suggesting a range of network topologies that are suitable for building value chain network theory (Hearnshaw & Wilson, 2013). They offer some measures of networks such as network transitivity, clustering, and degrees connectedness that lead to understanding various properties of the network, such as speed of information and innovation diffusion, resilience, and adaptability as examples. It is hoped that further work in this interdisciplinary area will provide more robust measures of value chain network properties and help us understand the behaviour of network governance models in the future.

Indeed, while relational networks have been extensively researched, Provan and Kenis (2008) suggest that a surprisingly small amount of research addresses the governance of organisational networks as a whole, which Jones et al. (1997, p. 914) define as;

> "A select, persistent, and structured set of autonomous firms (as well as non-profit agencies) engaged in creating products or services based on implicit and open-ended contracts to adapt to environmental contingencies and to coordinate and safeguard exchanges. These contracts are socially – not legally – binding".

The premise being that rather than a series of formal arrangements between firms, networks emerge out of social mechanisms which facilitate relationships among actors to in order to achieve network goals (G. Alvarez, Pilbeam, & Wilding, 2010). However, while the governance between network members may be socially binding, the network itself may be contractually mandated, such as the case, for example, of collective action in public sector networks (Provan & Kenis, 2008).

Alternatively, Sacchetti and Sugden (2003) view governance in terms of power as a determining characteristic of the nature of network contracts and relationships. The authors suggest that viewing networks in this way shifts the focus of relationships from a discussion of allocative issues to one of distributional issues. This logic is often applied to supply networks where the focus is on the coordination of actors, resources, and activities to deal with issues surrounding relationships and complexity (Braziotis et al., 2013; Ford, Gadde, Håkansson, Snehota, & Waluszewski, 2010). Hence, while networks are made up of autonomous firms where social contracts are often enacted (Jones et al., 1997), there is also a need for some type of formal governance within and across the network as a whole to ensure that network goals are met, conflicts addressed, and resources used both efficiently and effectively (Provan & Kenis, 2008).

*Table 3 Summary of network definitions.*

| Author | Type of Network | Definition |
|---|---|---|
| Harland, Lamming, Zheng, & Johnsen (2001, p. 22) | Supply network | Nested within wider interorganization networks and consist of interconnected entities whose primary purpose is the procurement, use, and transformation of resources to provide packages of goods and services. Supply networks comprise chains through which goods and services flow from original supply sources to end customers |
| Lazzarini et al. ( 2001, p. 7) | Net chain | A set of networks comprised of horizontal ties between firms within a particular industry or group, such that these networks (or *layers*) are sequentially arranged based on the vertical ties between firms in different layers |
| Peppard and Rylander (2006, p. 132) | Value network | A set of relatively autonomous units that can be managed independently, but operate together in a framework of common principles and service level agreements |
| Provan and Kenis (2008, p. 231) | Network | Groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal |
| Kühne, Gellynck, and Weaver (2010, p. 1) | Chain network | A set of networks connected via horizontal and vertical relationships. Horizontal networks consist of firms belonging to the same industry, thus being primarily competitors or peers. Vertical networks are composed of the different partners of the agrifood chain involved in all upstream and downstream flows of products, services, finances, and information |
| Lusch, Vargo, and Tanniru (2010, p. 20) | Value network | A spontaneously sensing and responding spatial and temporal structure of largely loosely coupled value proposing social and economic actors interacting through institutions and technology |
| Kähkönen (2012, p. 682) | Value net | A dynamic, flexible network comprising the relationships between its actors who create value through collaboration by combining their unique and value adding resources, competences and capabilities |
| Hearnshaw and Wilson (2013, p. 444) | Network | A set of “nodes” that represent autonomous business units as firms who are able to exercise sovereign choices, and a set of “connections” that links these firms together for the purpose of creating products or services |
| Kowalkowski et al. (2013, p. 19) | Value constellation | Actors pursue repeated, enduring exchange relations with one another and deliberately work together to mobilize value creation |
| Lambrecht, Kühne, and Gellynck (2014, pp. 192-193) | Innovation network | A set of relations through which the company acquires, assimilates, transforms and exploits knowledge, thus serving as the medium for the combined transformation of the company’s internal and external resources into an innovation |

Source: Authors

To this effect, Provan and Kenis (2008) offer a categorisation of network governance forms, based upon the two dimensions of centralised/decentralised coordination, and participant/externally governed (see Figure 1 below). Where governance is decentralised, and the network is governed by participants, there are many interactions between organisations and hence, governance is shared. We suggest that this particular form of governance occurs among the formal ties between organisations and also along the informal interpersonal ties between individuals. For example, in the healthcare sector nurses often enact a shared governance model whereby members are jointly responsible for achieving goals, are self-directed, have access to information, and exercise authority and control over work tasks, yet are contracted to a particular organisation (Anthony, 2004).

In contrast, when coordination is centralised, and the network governed by participants, there are fewer organisation-to-organisation interactions and commonly a lead organisation will emerge within the system (Provan & Kenis, 2008). This form of governance is common in the agricultural sector, whereby a lead organisation is responsible for the coordination of the chain/network. For example, Mutti S.p.A, an Italian tomato processor, coordinates with producers on farm to incentivise the production of certain tomato varieties, while also investing in brand marketing, and innovation to deliver and communicate superior quality to the market (J. B. Alvarez, Knoop, & Shelman, 2013). We draw a distinction between lead organisations that are directly involved in the operations of the VC and those that govern VC but are not directly involved in operational processes. The first are often called 'channel captains' or lead organisations, while the latter are often industry bodies or associations that have been granted some authority (either participatory or mandated legislatively) to govern the VC by setting polices, standards, or advocacy.

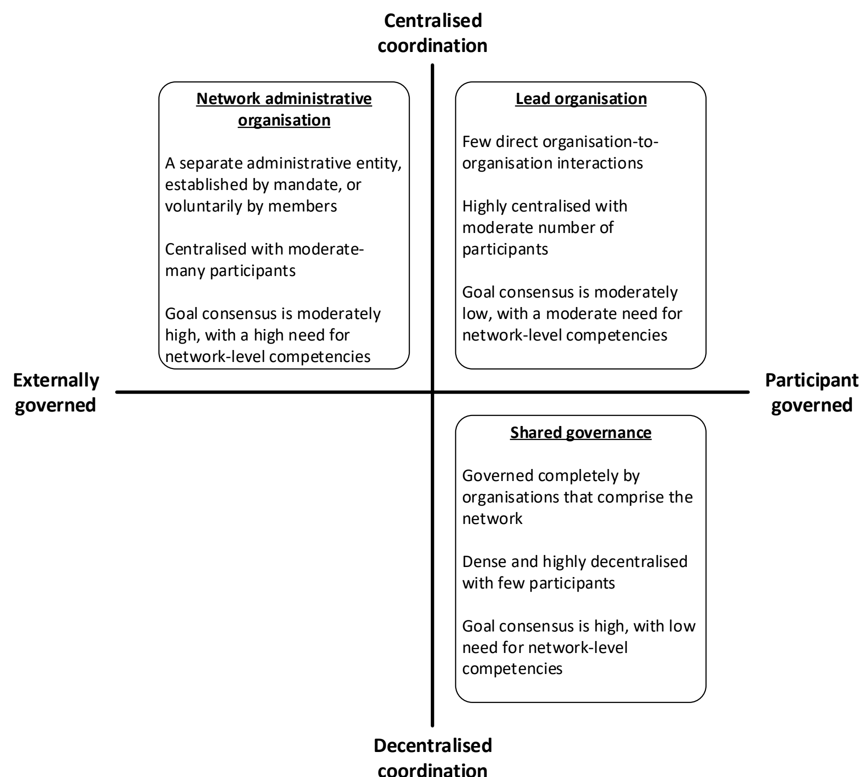


*Figure 1 Modes of network governance. Adapted from Provan and Kenis (2008) and van Velzen (2016)*

In the case of externally governed networks, Provan and Kenis (2008) suggest that Network Administrative Organisations (NAO) may be either voluntarily established by network members, or may be mandated by legislation to coordinate the network. In this sense they act in a similar manner as lead organisations, however the NAO supports, rather than executes network leadership and Provan et al. (2007) suggest that the NAO form of governance may coexist with other forms of governance. In New Zealand for example, Beef + Lamb New Zealand Ltd is an NAO voluntarily established by farmers to act as an industry organisation, promoting beef and lamb in the domestic market (Beef + Lamb, 2018). However, the organisation is not involved in any production and processing, and farmers supply produce into a value network of choice, each with its own unique governance structure.

While distinct, the GVC and network literature have many overlaps. Both concentrate on attempting to understand the value generation activities of a series of linked firms and attempting to capture the systemic influences beyond the dyad. Bilateral exchanges are easier to define and measure, hence this is perhaps why there is an abundance of literature on this form of exchange. They are indeed critical and form the individual links within the supply chain system as a whole and can be understood in the network literature as the links (edges) between the nodes (vertices). Yet understanding the shape and nature of the network governance as a whole is the area of real interest. It is in this space that supra-organisational forms exist, the 'extended supply chain' (Edwards, Peters, & Sharman, 2001), and 'value constellations' (Corsaro, Ramos, Henneberg, & Naudé, 2012). These configurations transcend normal organisational boundaries and provide a platform for chain wide visibility, coordination and conflict resolution, in effect, network governance. Through the consideration of both bilateral and network forms, a more holistic view of governance emerges. Previous work in examining network governance in the agribusiness industry (Kähkönen, 2012; Raynaud et al., 2005; Trienekens et al., 2017) has made considerable progress. However, this area is still under researched and hence, this project will examine value chain governance in an agribusiness context.

# 4. Agribusiness Value Chains

A changing business environment has seen a shift in the way that firms conduct business. Competition now exists at the system, rather than the firm level, and consumers are increasingly demanding higher quality, differentiated products. In primary production, Jraisat (2016) suggests that the key trends impacting VC's are the increasing complexity of public and private standards, globalisation, country of origin production, and the strong growth of consumer retailing in developing countries. Alternatively, Matopoulos et al. (2007) offer a number of macro and micro-environmental factors affecting the agricultural industry and its propensity for VC members to collaborate, including: globalisation and industry consolidation, changing consumer demands, changing legislation, industry structure, and product features. These changes have resulted in a move away from commodity production, to better differentiated, value added production, driving a shift towards closer coordination of land-based VC's (Hobbs & Young, 2000).

As a consequence of this shift in industry structure, the governance decisions within the VC are of critical importance as they impact the efficiency and effectiveness of the delivery of value to the final consumer (Kähkönen & Lintukangas, 2012). At the bilateral level, while there is a growing emphasis on co-creation and collaborative partnerships between firms (Heide & John, 1990), there is still the legacy of local (firm level) as opposed to chain wide optimisation within the agricultural industry. Indeed, network governance based on systems thinking is essential to move from an uncoordinated 'heap' to an interlinked and well-coordinated whole value system (Kühne et al., 2010). Indeed, Jraisat (2016, p. 353) argues as "…the firms exchange benefits (eg resources and information) and change the business link situation (eg transaction activities and bonds) toward each other and other firms. These firms (actors of buyers and sellers) adopt strategic networking to improve their value added and overlay their relationships socially to build firm performance".

Land-based VC's are often characterised by a lead firm governance structure, whereby one firm (generally located downstream) acts as a gatekeeper to market (Konefal et al., 2005). In commodity chains suppliers, such as farmers, typically hold little power as market signals are poorly communicated upstream by retailers who control data on consumer segment preferences, resulting in information asymmetry and power imbalances (Ponte & Sturgeon, 2014; Vlachos, 2014). However, in the case of differentiated VC's, the lead organisation may not be the retailer and better coordination across the chain is the result of intelligence gathering by the lead firm, information sharing and responsiveness by chain members (Matsuno, Mentzer, & Rentz, 2005). Consequently, there is a possibility for greater value creation and captured by those who create value, rather than surrender to large and powerful actors downstream. For example Zespri, a New Zealand based kiwifruit marketing cooperative, acts as the lead organisation and invests heavily in market research, research and development, and marketing (including product placement in retail stores). Consequently, the chain is able to command up to twice the world price on the marketplace for its kiwifruit (Saunders, McDonald, & Driver, 2011).

The challenge is still to understand the forms and nature of chain wide governance and its effect on value creation. Hence, using the context of land-based value chains, we introduce the following framework to guide the current research.

## 5. Conceptual Framework

Building upon the preceding discussion on value and governance, we first highlight the basic logic of the proposed framework, shown below in Figure 2.

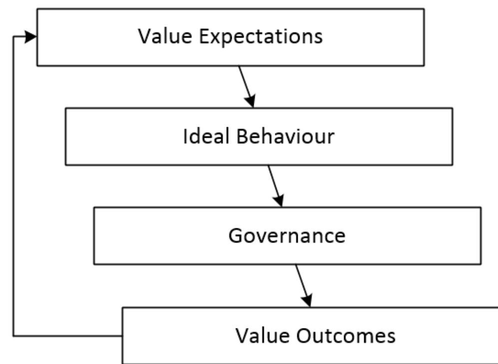


*Figure 2 A basic decision making framework.*
Source: Authors

The premise of Figure 2 being that by adopting a VC or a market orientated logic, the value expectations of the end customer must be the first consideration of all VC members. Therefore, defined customer expectations drive the 'ideal behaviour' of value chain members as they create and capture value through resource leveraging and production choices for their product offerings. This proposed ideal behaviour should drive the governance choices that then dictate how the chain arrangements are organised and managed. The intent being to restructure and/or re organise the value arrangements in response to changing consumer expectations, behaviour and the environment. These governance structures are said to mediate the value outcomes of the value chain and the behaviours of the individual actors within it. Firms will evaluate the value outcomes of production and adapt or reconfigure their behaviour in order to better meet the expectations of the final consumer. They can do so only when credence attributes are understood and communicated though the value chain. The actors within the value chain are motivated by an implicit assumption that collaborative actions and complying with value chain norms will generate greater rents for all. Hence, the delivery of value is not a discrete activity, but an ongoing process requiring continuous changes by the VC as a whole.

Following this overview, the question turns to examining the governance structure of a value chain overall. It is argued that to understand the whole one should examine the component parts, their role in the value creation process and especially the system synergies between these parts. To do so a full conceptual framework is introduced (see Figure 3 below) that highlights a focal firm's governance decision making, regarding value creation and value capture in land-based VCs. The framework is iterative in nature indicating that decisions are not discrete events, and there is a degree of path dependence which impacts on future decisions. The logic of Figure 2 is extended, whereby the required changes, governance, and actual processes and activities of firms are separated into an internal view and an external view. This allows an analysis of VC's to take place at the firm, bilateral, and VC levels, thus providing a contribution to the dearth of end-to-end chain governance literature. Additionally, the framework acknowledges the importance of natural

resource choice, an important factor of land-based VC's. In terms of governance, mediating factors both endogenous and exogenous to the chain are highlighted in the framework as an important influence on incentive and governance choice.

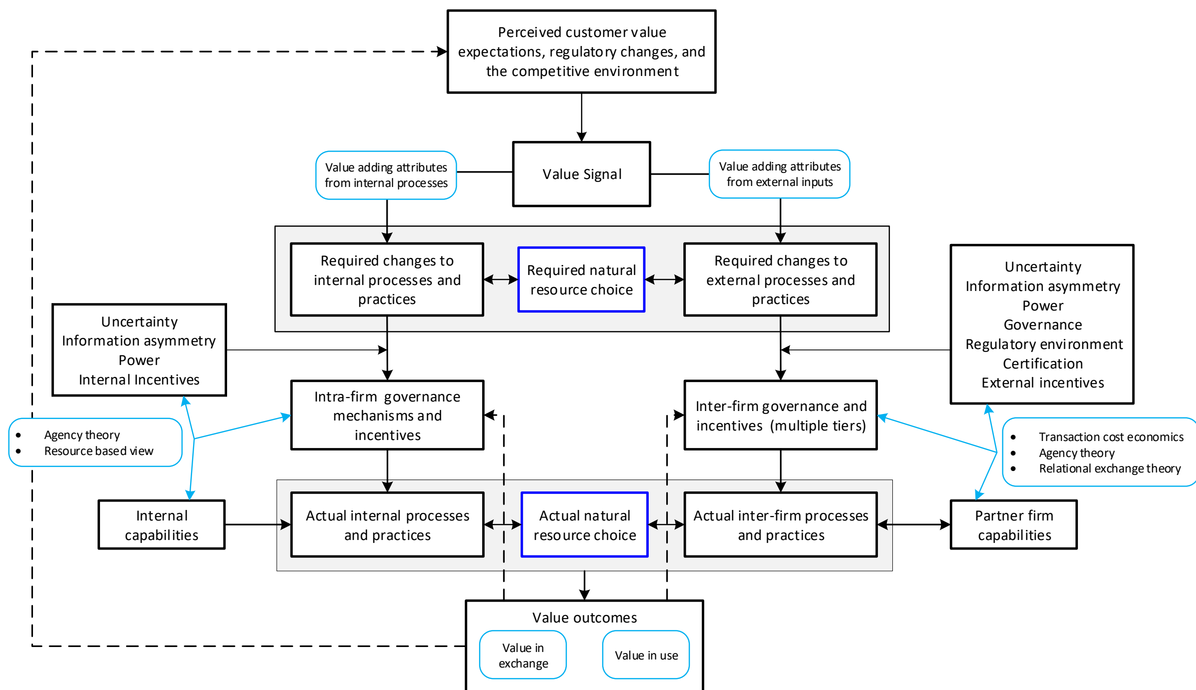


*Figure 3 A theoretical framework of the focal firm's governance decision making framework to create and capture added value in the value chain.*
Source: Authors

A VC logic forces firms to look towards the needs of the final consumer, and all activities should be directed towards value creation to this effect. We argue that this logic is derived from understanding the key attributes that create and capture value in the first instance. One such attribute is a market orientation (MO) that Grunert et al. (2005) regard it as a prerequisite for creating superior customer value and a competitive advantage. Other key value chain attributes discerned from the literature are addressed below in the proposition development section. It is by examining how these value chain attributes are deployed both internally and externally through the decision framework of the above conceptual model that we will attempt to derive a view of the various forms of network governance used in our sample of case studies.

## 5.1. Proposition Development

Following the review of the value chain literature, certain themes have been discerned that are postulated to be key in generating value for value chain networks. This research has identified five major attributes that, we argue, help facilitate value generation and capture. These are identified as;

1. Market orientation
2. Information enriched value chains
3. Aligned incentives through the value chain
4. Channel leadership (power)
5. Integrated network governance models

Following these main attributes, the review has also identified three additional supporting attributes that help enhance or preserve value creation. These supporting attributes are:

1. Value co-creation
2. Resilience and adaptability
3. Brand ownership and control

Taking these main and supporting attributes, this research then attempts to explain the value generating logic of each and this leads to the following research propositions.

### 5.1.1 Market Orientation

Market orientation (MO) refers to the mental models held by decision makers in the value chain (Grunert, et al., 2010), and the extent to which these actors use market intelligence, especially about the end consumer, to influence their value generating activities, known as 'visibility of preferences' (Bustinza, Parry & Vendrell-Herrero, 2013). Indeed, evidence suggests that a market orientation has a positive impact on firm performance. A review by Liao, Chang, Wu, and Katrichis (2011) found that of those studies that examined the direct impact of MO on firm performance, the overwhelming majority found a strong positive link between the two. Additionally, a MO is often correlated with learning (Felix & Mark, 2003; Mavondo, Chimhanzi, & Stewart, 2005; Santos-Vijande, Sanzo-Pérez, Álvarez-González, & Vázquez-Casielles, 2005) and innovation (Aldas-Manzano, Küster, & Vila, 2005; Im, Hussain, & Sengupta, 2008). Learning facilitates competency development, and Søndergaard (2005) suggests that when MO is coupled with innovation, an understanding of customer needs leads to better serving the market through new product development. Interestingly, Farrell, Oczkowski, and Kharabsheh (2008) found that MO has a stronger positive relationship with organisational performance than a learning orientation. This suggests that a MO is a key factor in creating value, hence, we propose that:

$P_1$. A market orientation is a key antecedent for network governance that facilitates value creation and value capture.

### 5.1.2 Information Enriched Value Chains

The lower the level of information asymmetry in the value chain, the lower the risk of opportunistic behaviours, leading to greater value creation potential. This involves three major information flows in a VC;

1. The dissemination and communication of the *value proposition* to the consumer.
2. The dissemination of market intelligence of consumer *credence attributes* and preferences.
3. The dissemination of *operational information* (planning, forecasting and physical distribution) that coordinate the day-to-day activities of the value chain.

Value creating chains operate in an information rich environment displaying high levels of awareness of the value proposition and consumer credence attributes by all participants along the VC. This visibility then drives innovation, product/market development, investment decisions and governance arrangements (Jiménez-Zarco, et al., 2011). Those who hold the information in the value chain are best placed to capture value. Hence, we propose:

$P_2$. Network governance facilitates high levels of information visibility and symmetry at each level of the value chain thus increasing value creation.

### 5.1.3 Incentive Alignment

In terms of incentives, Hobbs (2003) suggests that there are three broad categories related to land-based VC's; economic, regulatory/legal, and human capital. Economic incentives are derived from higher profits through greater revenue and/or reduced costs (Brandenburger & Stuart, 1996) that relate to enhanced food safety and products features that command a price premium in the marketplace. Regulatory incentives are put into place by government and policy makers in an effort to force firms to internalise spill-over effects and bear the burden of social costs. These include incentives such as changes to property rights, subsidies, and liability changes in an effort to incentivise risk reduction strategies associated with issues such as food safety and environmental protection (Hobbs, 2003). Finally, human capital incentives refer to skills and building of knowledge. This is grounded in RBV theory and refers to a firm developing its core competences and gaining access to codified and tacit knowledge within the VC that would otherwise be unreachable (Teece et al., 1997). Hence, value chain incentives can be driven by economic, regulatory and resources issues and aligning these to value outcomes is key to value delivery to the end customer.

Conversely, misalignment of incentives exacerbates the issue of frictions (Chatain & Zemsky, 2011), and causes value destruction within the chain through problems such as excess inventory, stock-outs, poor forecasting, and inadequate sales efforts (Narayanan & Raman, 2004). Additionally, Scherpereel (2006) argues that misalignment results in decision errors that should be corrected through realignment. Indeed, chain wide governance structures arise in response to mitigate and correct these misalignments. Agarwal, Croson, and Mahoney (2010) suggest that there are two main categories of incentive alignment; economic and communication, while Narayanan and Raman (2004) offer three solutions to encourage redesign or alignment: rewriting contracts, revealing hidden information, and developing trust. Incentive schemes should be aligned to produce behaviour consistent with the overall VC objectives, not local goals (Simatupang and Sridharan, 2005; Narayanan and Raman, 2004), hence, we propose:

$P_3$. Network governance facilitates aligned incentives throughout the value chain that lead to better value outcomes for chain members and the value chain network.

### 5.1.4 Channel Leadership (Power)

Value generating chains following a differentiation strategy (product and/or market) will demonstrate a centralised mode of coordinating leadership were channel policies and actions are able to be coordinated as a single entity. These central actors are known as 'channel captains' or 'leaders' (Mehta, Larsen & Rosenbloom, 1996). In terms of channel leadership, Provan and Kenis (2008) argue for two main forms of decision making; shared/decentralised or centralised coordination. It is argued that, while there is some strength in the consensual process of the decentralised model, the decision making process can be messy and time consuming. Indeed, given the exigencies of a rapidly changing market place, there is some merit in centralising decision authority in the 'lead firm' and/or NAO forms of governance. The risk is the loss of the democratic voice of value chain actors, and the exercise of coercive power to enforce compliance as opposed to the use on non-coercive forms of power. However, benefits accrue as a result of a centralised voice

or leadership such as a greater channel alignment to the value signals, greater efficiencies, and value. Hence, it is argued that:

> $P_4$. Value chains that have a lead organisation and/or a NAO governance type that use non-coercive sources of power achieve greater value outcomes for the chain members.

### *5.1.5 Integrated Network Governance Models*

Value generating chains will demonstrate integrated governance models based on collaborative protocols (Soosay & Hyland, 2015). Governance is manifested through an array of bilateral and network relationships that act both as enforcing mechanisms to ensure compliance and mitigate self-interested behaviours (Stump & Heide, 1996), and also facilitation mechanisms that promote joint action, reciprocity and collaborative behaviours (Matopoulos, et al., 2007). Bilateral governance arrangements can be classified along a continuum ranging from pure spot markets to vertical integration where transactions are internalised. The levels of interdependence, information exchange, mutuality, risk and reward sharing, trust and commitment and long-term orientation increases as the collaborative/relational content increases (Pilbeam, Alvarez & Wilson, 2012).

The effort expended in maintaining and enhancing the partnership is important in the management of relationship type. Here, we distinguish between two relationship approaches in creating value: co-creation and collaboration, whereby co-creation tends to be tactical in nature and combines knowledge and skills to achieve higher profits than could be realised when working independently (Enz & Lambert, 2012). Co-creation will be discussed as a supporting attribute next. In contrast, collaborative relationships have a strategic longer-term focus and are fostered on the premise that the relationship interaction itself co-creates additional value for both the customer and the supplier when applied along the VC (Grönroos, 2004). Managers hoping to enhance relationship value often work towards more collaborative forms, with Arndt (1979, p. 72) concluding that "…both business markets and consumer markets benefit from attention to conditions that foster relational bonds leading to reliable repeat business". However, this is not to suggest that arms-length transactional exchange should be avoided, as these exchanges are indeed appropriate for non-critical and non-differentiated product offerings (Williamson, 1979). However, interestingly, Trienekens et al. (2017) found that in market oriented chains, spot market contracts were rarely used, concluding that a certain level of integration may be conditional factor in being market oriented. Our key concern is in trying to understanding collaboration as a mechanism for chain wide or network governance, hence, we propose:

> $P_5$. Network governance arrangements based on the collaborative protocols of common goals, reciprocity, shared risks and rewards, trust and commitment allow greater alignment with value signals and hence, facilitate value creation and value capture.

Having addressed the five main attributes of value generating value chains, the following three supporting attributes are examined next.

### *5.1.6 Value Co-creation*

O'Cass and Ngo (2012) suggest that having a market orientation and information enriched VC is not enough to gain a marketplace advantage. Firms must also seek to build relationships and engage in co-creating activities. Indeed, Vargo and Lusch (2008) state that value creation is at the core of exchange, and Yan, Yang, and Dooley (2017, p. 154) state that supply relationships create several

types of value, namely: "…core value production, value adding relational value, and future oriented relational value". Geiger et al. (2012, p. 84) define relationship value and co-creation as "…the sum of the benefits and cost reductions generated in an ongoing exchange with a business partner". As noted above, co-creation is more of a tactical activity but no less valuable in creating value. Indeed, Value is co-created by the ongoing interactions between organisations within the VC (Helm and Jones, 2010). Co-creation is driven by necessity as the competitive environment forces firms to seek access to different combinations of resources from partners. Co-creation of value happens between firms and within the whole network and can be thought of as a combination of both 'tangible value' (such as profit and access to assets) and also 'intangible value' (such as access to new markets, knowledge, innovation and relational) (Rypens, Lievens & Balazevic, 2016). Hence we propose that;

> $P_6$. Network governance facilitates the co-creation of value through various combinations of tangible and intangible resources with partner firms in the network.

### *5.1.7 Resilience and Adaptability*

Value generating chains are resilient to disruptions and adapt quickly to new conditions, competition and economic uncertainty. Value chain resilience is the ability of the system to absorb shocks and to return to equilibrium after the disturbance (Christopher & Peck, 2004), and involves pre-disturbance preparation and post event response efforts (Chowdhury & Quaddus, 2016). Adaptability is the ability to reshape the nature of the value chain in response to disruptions, disasters, changes in business imperatives and economic realities (Pettit, Croxton & Fiskel, 2013). Both resilience and adaptability allow value chains to quickly adapt to changing markets and absorb disturbances with minimal disruptions. Therefore, we propose that;

> $P_7$. Value creation and capture are maintained through the value chain properties of resilience and adaptivity to natural and business disruptions.

### *5.1.8 Brand Ownership and Control*

Chains that adopt a differentiation strategy (product and/or market) will demonstrate strong brand ownership and control over product, price, promotion and place activities by maintaining control as far downstream as possible, preferably to the final consumer. It is argued that the higher the level of control by agricultural producers, the greater amounts of value they will be able to appropriate. Depending on levels of vertical integration, this can also take the form of ingredient co-branding strategies (Pfoertsch & Chen, 2011). Indeed, a key aspect for agricultural chains is the level of consumer identification with the brand story (place, people and production) of the product and the explicit links with the producers. Helm and Jones (2010) argue that brands are often the most valuable assets owned by a firm and that value is created not only by the brand, but through the consistently delivery of the brand promise to consumers. Often these brand promises are validated for consumers through auditing and certification schemes to ensure brand promises are real and meet relevant industry standards. Thus, we propose that;

> P8. Network governance facilitates brand ownership and control through a value chain by producers, and the consistent delivery and auditing of the brand promise.

## 6. Conclusion

It is evident from the literature that the concept of value is intricate, and there is no single 'right' pathway organisations should follow to add and capture value. Each activity undertaken by organisations across the chain influences the value creation process, and every relationship type/structure impacts upon value capture. Hence, the way in which processes and activities at each level of the supply chain (internal, bilateral, chain, and network, see Harland, 1996) are managed is of critical importance.

This report has explored the interplay between value creation/ capture and governance, and adds to the ongoing discussion regarding chain wide governance of VC's. In terms of value creation and capture, we proposed that improved performance outcomes may arise through the presence of five vital and three supporting attributes of value chains. Indeed, evidence suggests that key amongst these is a market orientation and this is well aligned with the philosophy of the VC literature reviewed. Several empirical studies find support for improved organisational performance, particularly when firms also share information (Im et al., 2008; Santos-Vijande et al., 2005). Further, customer needs, prices, regulatory changes, and external environmental factors that are relayed to firms are called 'value signals'. These value signals should trigger required operational changes within the chain to deliver value to the end consumer, and these take place both within, and between organisations. In terms of internal value processes, the corporate governance literature deals with organisational factors such as structure, firm size, board composition and the value generated through internal operations and product transformation processes (Hu, Tam, & Tan, 2010; Weir et al., 2002). Internal firm structures are well researched within the literature, particularly within Agency theory (Eisenhardt, 1989; Fama & Jensen, 1983), while processes and resource use have been well addressed within the Resource Based view (Barney, 1991; Teece, Pisano, & Shuen, 1997). While this research acknowledges the importance of these contributions, it is clear that inter-organisational structures have been less thoroughly researched. Therefore, this research focuses on exchange ties at the bilateral and network level, as the two are not mutually exclusive.

As such, governance was investigated at both the bilateral and systems level, with the propositions that market orientation, information enriched, aligned incentives, channel leadership and collaborative network governance all lead to enhanced value outcomes for VC members. In addition, it is proposed that co-creation, resilience and adaptability, and brand ownership and control all support value creation. Indeed, relationship value has been well researched with Vargo and Lusch (2008) arguing that partnerships are at the core of value creation, particularly when chains are market oriented, as information generation, dissemination, and responsiveness are critical success factors. Further, in the case of the network governance structure, we propose that lead organisations and/or NAO lead to better value outcomes as value signals are aligned, and greater efficiencies are achieved. In addition to governance forms, aligned incentives are important in directing network goals, and ensuring that transaction frictions are minimised, and may be achieved through the use of formal and informal controls throughout the system.

This report argues that when these value chain attributes are applied to a firm and also a value chain, the process of alignment happens as illustrated in the conceptual framework. Here a market orientation facilitates the discernment of the value signals from the consumer segment, these signals will determine what value is required from both within the firm and the value chain. This view of value will then dictate the adoption of the most appropriate network governance structure within the limitations of the market and internal and external factors. The last step is to determine the actual changes needed to meet the consumer value requirements which lead to higher value

outcomes. Hence, this work will contribute to the current discussions on the various levels of analysis within the literature (Lepak et al., 2007). The framework may be applied to multiple levels of the supply chain, allowing for an end-to-end chain view of governance, an area which is still underdeveloped in the extant literature. Through operationalising this framework, a study into the relationship between value creation and value capture may take place. We propose that the study should be exploratory in nature to capture the nuance of the interacting components of this framework and the eight derived attributes. Hence, we suggest that a case study would provide a great amount of rich data in which to investigate the propositions introduced by this research.

To facilitate this, a set of interview protocols have been developed to help capture the data and provide reliability and validity. These protocols have been spilt into two roles, that of the Interviewer and the Recorder or note taker, assuming that two people will be present. The protocols for the Interviewer and the Recorder are attached at Appendix A and B respectively.

# 7. References


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## Appendix A: Interview Protocols - Interviewer

**Our Land and Water National Science Challenge**
**Integrated Value Chains Project**

## Interviewer's Protocol

**Preamble:**
Firstly, thank you for agreeing to meet with us. This research is part of the wider National Science Challenges sponsored by the Ministry of Business, Innovation and Employment (MBIE), NZ Government. One of the key challenges within this framework is how to best manage our land and water.

The goal of the Our Land and Water Challenge is to enhance the production and productivity of New Zealand's primary sector, while maintaining and improving the quality of the country's land and water for future generations. This work we believe will have major and enduring benefits for New Zealand.

Hence, your participation is very important in trying to help us understand what it takes to get the very best out of our value chains for primary products.

Our questions will focus on the key value chain activities and relationships that exist within your own operations and your wider value chain, up to your final customers.

**Confidentiality and Participation:**
I would like to emphasise that anything you say will remain confidential between you and the research team. Each interview will be assigned a code and stored securely. All names and titles will be ammonised.

During this research we would like to interview your key value chain partners. We can assure you that any information, data and opinions (both positive and negative) you may express during this interview will not be transmitted or used in any subsequent interviews.

We would like to emphasise that your participation is voluntary and was ask that you feel free to decline to answer any question, or end the interview at any point without explanation.
Would you like to proceed?

**Demographics (fill in prior to interview)**

Interview Date: ________________________________
Informant's Name: ________________________________
Position: ________________________________
Time with value chain: ________________________________
Firm Annual Turnover (NZD): (use latest full year if available)

○ < 100k ○ 100k - 500k ○ 500k - 1M ○ 1 - 2M ○ 2 - 5M ○ 5 - 10M ○ > 10M

Firm FTE's:

○ < 5 ○ 5 - 20 ○ 20 - 50 ○ 50 - 100 ○ 100 - 200 ○ 200 - 500 ○ > 500

Warmup Question
Tell me about your current role in this value chain ______________________________

**Attribute 1: Market Orientation**
*Key Interview Question*:
- Do you receive any signals from the consumer?
- How do you get these and how do you respond?
*Research Question*: How do you receive information about what your final consumer's want, and how do you process this information into actions to increase returns?

*Prompts*:
☐ What are you doing to gather information?
☐ How important is this information to you?
☐ Does it come from the next step in the value chain, or is there an integrated information system?
☐ What have you done with the information (specific example, perhaps)?
☐ What works well in your experience? Has any of this changed over time?
☐ Are there differences in different value chains for your product?
☐ What are the barriers to action in response to market information about the final consumers?

*Field Notes:*

**Attribute 2: Information Enriched**
*Key Interview Question*:
- How and who do you communicate with in the value chain?
- How often do you have this communication and how good is this communication (e.g. how does it help you?)
*Research Question*: What technologies/sources do you use for communicating with which partners in the value chain, and allowing them to communicate with you?

*Prompts*:
☐ Which partners do you communicate with and why?
☐ Frequency of communications?
☐ Quality of communications?
☐ What level is the communication taking place at (e.g. between managers, or between technicians)?
☐ Communication within the firm, as well as with value chain partners?
☐ Sources: In-store reps? E-trade intelligence? Competitions or promotions? Newsletters?
☐ How do you handle commercially sensitive information or IP?
☐ How do you ensure trust in the information received and transmitted?

*Field Notes:*

**Attribute 3: Incentive Alignment**
*Key Interview Question*:
- What rewards (including non-financial) do you get for meeting consumer requirements? - - Has this increased/changed?
- How important are the contract clauses in shaping your behaviour?
- What benefits are not covered by contractual arrangements?

*Research Question*: How do your formal contracts or informal arrangements in the value chain reward partners for meeting customer expectations and values, and has this changed?

*Prompts*:
☐ Are the arrangements fair (compared to what other partners receive)?
☐ Can you give a specific example where you were rewarded for introducing a change that met consumer requirements?
☐ Was the reward part of a formal contract or an informal arrangement?
☐ Did it require an initial sacrifice for a long-term benefit? (key theme).
☐ How are your incentives affected by competitive pressures and regulatory requirements?
☐ How does new consumer information or new costs change the incentives of the partnerships?

*Field Notes:*

**Attribute 4: Chanel Leadership / Power**
*Key Interview Question*:
- Who leads the value chain?
- How do they influence you and your decisions?
- How much influence do you have over their actions?

*Research Question*: How are the overall policy and values of the value chain determined and enforced; who calls the shots and how is this done?

*Prompts*:
☐ Can you give an example where one of the partners in the value chain ultimately determined the practices or values of the chain?
☐ What was the source of their authority or power? (Legislation / coercive power / commercial strength / enabling resources / specialist knowledge / other?________)
☐ Does the channel leader influence contract clauses?
☐ What is your level of influence or power in these decisions? Is it enough?
☐ Is there a difference between the value chain's *bilateral* connections and its *overall* chain wide control mechanisms?
☐ What happens if someone does not respect the 'values' of the value chain?
☐ How is behaviour audited and poor behaviour sanctioned?

*Field Notes:*

**Attribute 5: Integrated Network Governance**
*Key Interview question*:
- How does the value chain work as a whole, beyond the bilateral relationships?
- Can you describe the collaborative relationship connections (not legal, but socially binding agreements) up and down the value chain?

*Research Question*: How are the different relationships in the value chain integrated to create a collaborative value maximising strategy? Do these social agreements help safeguard exchanges? Do they prevent opportunistic behaviours by others?

*Prompts*:
☐ How do you connect with value chain members other than your bilateral (next-door) partners (if you do)?
☐ Is there a coordinating body or a network group among value chain partners?

☐ How does it operate? And do you have a voice in this body?
☐ How is the balance between formal contracts and socially binding agreements arranged or managed?
☐ Describe any non-financial (e.g. new mastery, reputation, cultural values) as well as financial rewards for collaboration?
☐ How are risks shared, as well as the gains (gain-share and pain-share)?
☐ Are there sanctions applied to others who deviate from the social norms of the value chain?

*Field Notes:*

**Attribute 6: Value Co-creation**
*Key Interview Question*:
- What key resources (tangible and intangible) do you contribute to the value chain?
- What key resources do you need from your value chain partners?
- Who pays for R &D and Innovation and who holds the IP in this value chain?
*Research Question*: What do the different partners in the value chain contribute (especially intangible assets or specialist capabilities) to delivering value?

*Prompts*:
☐ What resources (tangible and intangible) must you provide to be part of the value chain?
☐ How dependent are you on other partners for total product value?
☐ Who delivers the innovation? and who pays for this function (of innovation, or R&D)?
☐ What types of value are embedded in the final product to consumers, and where do those different types of value come from along the chain?
☐ How do you ensure that other parts of the value chain (especially the last mile to consumer) do not cut across or destroy the value you create?

*Field Notes:*

**Attribute 7: Resilience and Adaptability**
*Key interview Question*:
- What are the key risks to you and your value chain? Do you have a plan to mitigate these?
- How easy is it for you to change your practices to meet changing consumer requirements and also the changing business environment?
- Can you describe any changes to land use practice in response to changing consumer requirements the business environment?
*Research Question*: How does each partner respond to shocks in the environment, and how does the value chain as a whole respond? How does the value chain deal with uncertainty and risks?

*Prompts*:
☐ Do incomplete contracts (social arrangements) allow flexibility in exchange?
☐ How are risks identified and communicated (other than market price) throughout the value chain?
☐ Do you engage in explicit risk mitigation? Can you identify a specific example where the value chain responded to a shock?
☐ What would happen if there was a major shift in consumer preferences (or perhaps regulation) for your product?
☐ Is there a specific partner in this value chain that is best placed to think about and react to risks and disruptions? (producers, processors, retailers)?

☐ How do you build in *agility* in the value chain?
☐ How easy would it be to introduce land use or land practice changes, or your management, in response?

*Field Notes:*

**Attribute 8: Brand Ownership and Control**
*Key interview question*:
- Do you know how the brand story is presented at retail?
- Do you have an input into how this is presented?
- Describe your input into the definition of the brand?
- Describe your equity in the brand?
- How is the brand audited?

*Research Question*: How do different partners influence one or more parts of the brand narrative?

*Prompts*:
☐ What influence or control do you have on the brand narrative – especially as it's presented to the final consumer (last mile distribution)?
☐ Are you responsible for any specific part of the brand narrative - describe?
☐ How does the brand narrative adjust to changes in market conditions (e.g. changing consumer preferences)?
☐ What is your view of the brand narrative and market profile?
☐ How is the brand authenticated through traceability mechanisms?

*Feld Notes:*

**Concluding Remarks and Thanks**
Is there anything else that you think that we should know about your value chain?

Would it be ok for us to contact you later to clarify any points?

We wish to thank you for your invaluable time and the information that you have provided. We very much appreciate your help.

[End of interview]

## Appendix B: Interview Protocols – Recorder

**Our Land and Water National Science Challenge**
**Integrated Value Chains Project**

### Recorder's Protocol

[Demographics – the same as the Interviewer's information]

**Attribute 1: Market Orientation**
*Key Information*: How are actions aligned to market signals about final consumers?
*Response:*

*Prompts*:
☐ What are you doing to gather information?
☐ How important is this information to you?
☐ Does it come from the next step in the value chain, or is there an integrated information system?
☐ What have you done with the information (specific example, perhaps)?
☐ What works well in your experience? Has any of this changed over time?
☐ Are there differences in different value chains for your product?
☐ What are the barriers to action in response to market information about the final consumers?

*Observations / Non-Verbal:*

**Attribute 2: Information Enriched**
*Key Information*: What are the day-to-day operational mechanics of the information received and transmitted? Distinguish between the 'value proposition' signals, 'credence attributes' signals and also 'daily operational' information.
*Response:*

*Prompts*:
☐ Which partners do you communicate with and why?
☐ Frequency of communications?
☐ Quality of communications?
☐ What level is the communication taking place at (e.g. between managers, or between technicians)?
☐ Communication within the firm, as well as with value chain partners?
☐ Sources: In-store reps? E-trade intelligence? Competitions or promotions? Newsletters?
☐ How do you handle commercially sensitive information or IP?
☐ How do you ensure trust in the information received and transmitted?

*Observations / Non-Verbal*

**Attribute 3: Incentive Alignment**
*Key Information*: How are partners rewarded for actions that add value to consumers?
*Response:*

*Prompts*:
☐ Are the arrangements fair (compared to what other partners receive)?
☐ Can you give a specific example where you were rewarded for introducing a change that met consumer requirements?
☐ Was the reward part of a formal contract or an informal arrangement?
☐ Did it require an initial sacrifice for a long-term benefit? (key theme).
☐ How are your incentives affected by competitive pressures and regulatory requirements?
☐ How does new consumer information or new costs change the incentives of the partnerships?

*Observations / Non-Verbal*

**Attribute 4: Chanel Leadership / Power**
*Key Information*: How does the channel captain exercise its authority and power?
*Response:*

*Prompts*:
☐ Can you give an example where one of the partners in the value chain ultimately determined the practices or values of the chain?
☐ What was the source of their authority or power? (Legislation / coercive power / commercial strength / enabling resources / specialist knowledge / other?________)
☐ Does the channel leader influence contract clauses?
☐ What is your level of influence or power in these decisions? Is it enough?
☐ Is there a difference between the value chain's *bilateral* connections and its *overall* chain wide control mechanisms?
☐ What happens if someone does not respect the 'values' of the value chain?
☐ How is behaviour audited and poor behaviour sanctioned?

*Observations / Non-Verbal*

**Attribute 5: Integrated Network Governance**
*Key Information*: Who talks to who in the extended value chain? How do decisions get made that influence the wider value chain? Describe the inter-organisational 'marco-culture' in terms of collaborative relationships up and down the value chain. Describing the key collaborative links (organic and informal) throughout the value chain.
*Response:*

*Prompts*:
☐ How do you connect with value chain members other than your bilateral (next-door) partners (if you do)?
☐ Is there a coordinating body or a network group among value chain partners?
☐ How does it operate? And do you have a voice in this body?
☐ How is the balance between formal contracts and socially binding agreements arranged or managed?
☐ Describe any non-financial (e.g. new mastery, reputation, cultural values) as well as financial rewards for collaboration?
☐ How are risks shared, as well as the gains (gain-share and pain-share)?
☐ Are there sanctions applied to others who deviate from the social norms of the value chain?

*Observations / Non-Verbal*

**Attribute 6: Value Co-creation**
*Key Information*: How is the IP and other specialist resources, capabilities, knowledge and skills owned by different partners in the value chain brought together for delivering value? (for example, a food producer will rely on a retail partner for access to consumers).
*Response:*

*Prompts*:
☐ What resources (tangible and intangible) must you provide to be part of the value chain?
☐ How dependent are you on other partners for total product value?
☐ Who delivers the innovation? and who pays for this function (of innovation, or R&D)?
☐ What types of value are embedded in the final product to consumers, and where do those different types of value come from along the chain?
☐ How do you ensure that other parts of the value chain (especially the last mile to consumer) do not cut across or destroy the value you create?

*Observations / Non-Verbal*

**Attribute 7: Resilience and Adaptability**
*Key Information*: How does the value chain build in resilience and adaptability to external shocks? The key attributes would be the *agility* and *flexibility* of the value chain in response to the changing business environment and sudden disruptions.
*Response:*

*Prompts*:
☐ Do incomplete contracts (social arrangements) allow flexibility in exchange?
☐ How are risks identified and communicated (other than market price) throughout the value chain?
☐ Do you engage in explicit risk mitigation? Can you identify a specific example where the value chain responded to a shock?
☐ What would happen if there was a major shift in consumer preferences (or perhaps regulation) for your product?
☐ Is there a specific partner in this value chain that is best placed to think about and react to risks and disruptions? (producers, processors, retailers)?
☐ How do you build in *agility* in the value chain?
☐ How easy would it be to introduce land use or land practice changes, or your management, in response?

*Observations / Non-Verbal*

**Attribute 8: Brand Ownership**
*Key Information*: How do partners in the value chain relate to the brand, especially if they do not legally own the brand?
*Response:*

*Prompts*:
☐ What influence or control do you have on the brand narrative – especially as it's presented to the final consumer (last mile distribution)?
☐ Are you responsible for any specific part of the brand narrative - describe?

☐ How does the brand narrative adjust to changes in market conditions (e.g. changing consumer preferences)?
☐ What is your view of the brand narrative and market profile?
☐ How is the brand authenticated through traceability mechanisms?

*Observations / Non-Verbal*

**Concluding Remarks and Thanks**
Is there anything else that you think that we should know about your value chain?

[End of interview]