African socio-cultural characteristics: enabling or hindering sustainability?

Abstract

Purpose:

This paper investigates the impact of African socio-cultural characteristics on the implementation of sustainability in global supply chains (SCs). Specifically, it explains how social agency problems arise and how sustainability-related governance mechanisms need to be modified for this context to meet the unique requirements of the prevalent informal buyer-supplier relationships.

Design/methodology/approach:

The paper adopts a multi-case study approach, with data collected from the upstream tiers of Ghana's cocoa and fruit SCs that serve global markets. Social agency theory is adopted to explain the insights generated from triangulating data from interviews, observation notes, and secondary data sources.

Findings:

The findings suggest that the prevalent weaknesses of formal institutions in African agri-food SCs magnifies formal-informal institutional tensions, which leads to cultural and institutional distances between Tier-1 suppliers and lower-tier suppliers. These distances induce social agency problems. Tier-1 suppliers must leverage ties with both formal and informal institutions to mitigate social agency problems and facilitate the embedding of formal sustainability requirements in line with socially-expected behaviours within the community.

Originality:

The research extends social agency theory by conceptualizing hidden agency problems within the context of the formal-informal institutional interplay. It contributes to institutional distance literature by demonstrating how informal governance mechanisms complement formal enforcement to drive sustainability in agri-food SCs. Further, it introduces culturally-embedded governance mechanisms that are particularly relevant in informal, non-contractual agency relationships.

Keywords: Supply chain sustainability, African socio-cultural characteristics, Social agency theory, Institutional distance, Informal-formal buyer-supplier relationships

1. Introduction

As supply chains (SCs) expand across geographically-dispersed regions to access new markets, raw materials, lower production costs and innovation, they also face increased sustainability risks due to the significant vulnerability of the remote locations of upstream suppliers (Matos *et al.*, 2024; Wilhelm *et al.*, 2016). The consequences of sustainability breaches on global brands have made fostering compliance across globally dispersed SCs a critical priority for many Western buyers (Marttinen *et al*., 2023). However, cascading sustainability requirements across national and continental boundaries poses significant challenges, as environmental and social responsibilities often differ between contexts (Villena *et al.*, 2021). Consequently, operations and supply chain management (OSCM) scholars and practitioners are increasingly interested in understanding how local cultural norms and informal networks influence the implementation and outcomes of SC initiatives (Howe and Jin, 2022).

Informal socio-cultural institutions, such as family, customs, values, religion, and local governance can profoundly shape buyer-supplier relationships (Wilhelm *et al.*, 2016). In contexts characterised by formal institutional voids, these informal institutions can mitigate the negative impact of institutional deficiencies (Boso *et al*., 2023; Zomorrodi *et al*., 2024). Indeed, scholars have argued that Western-oriented mechanisms have limited effectiveness in addressing sustainability risks in the African context due to financial, infrastructural, and institutional deficiencies (Schilling and Seuring, 2022). In contrast, the legitimacy and authority of informal institutions and traditional leaders in many African societies makes informal structures a reliable resource for mostly small-scale, lower-tier suppliers (Amankwah-Amoah *et al*., 2022; Razak *et al*., 2024). These lower-tier suppliers often lack the resources, capabilities, and expertise needed to meet formal, stipulated sustainability requirements (Clapp, 2021; Stevenson and Cole, 2018). As a result, they are likely to divert their exports to

less regulated markets to circumvent any strict sustainability requirements imposed by Western buyers (Kauppi *et al*., 2018).

Africa's increased role in the global economy due to its natural resource diversity, large working-age population, and favourable business environment emphasises the need to facilitate the integration of African businesses into the global business landscape (Kauppi *et al.*, 2018; World Economic Forum, 2023). To effectively manage SCs in this context, it is critical to understand African socio-cultural characteristics and how they inform buyer-supplier relationships. In addition, recent scholars have emphasised the need for more studies in the African context to uncover unique insights that inform the development of new theories or the expansion of existing ones (Jia *et al.*, 2023). Thus, this study asks: "*How do African socio-cultural characteristics enable or hinder the cascading of sustainability requirements through lower-tier suppliers?*"

To answer this research question, this study adopts social agency theory (Wiseman *et al.*, 2012) to elaborate on the role of Tier-1 suppliers in disseminating their customer's sustainability requirements upstream (Wilhelm *et al.*, 2016). Many global brands rely on Tier-1 suppliers to disseminate their sustainability requirements among lower-tier suppliers due to geographic dispersion and their lack of contractual obligations beyond Tier-1 (Villena *et al.*, 2021; Wilhelm *et al.*, 2016). This study argues that Tier-1 suppliers in sub-Saharan Africa face challenges in mediating the structural differences between their formal and informal relationships when fulfilling this role. Social agency theory is an appropriate lens to investigate these challenges as it extends beyond economic rationality to consider how social norms, communal values, and institutional contexts shape agent behaviour (Wiseman *et al.*, 2012). This perspective enables the research to explore how agency problems arise and are governed in informal, non-contractual settings – particularly in African agri-food SCs (AFSCs), where trust, embedded relationships, and collective norms play a critical role. Moreover, social

agency theory acknowledges the broader social context and emphasises that social agency problems emerge not solely from opportunism but also from interpretive and contextual misalignments (Wiseman *et al.*, 2012). To this end, an empirical qualitative case study of the upstream tiers of Ghana's cocoa and fruit SCs was conducted, gathering multiple perspectives from Tier-1 suppliers, smallholder farmers, and formal and informal institutional actors.

This study makes the following key contributions. First, it advances the social agency theory perspective in sustainable SC management by identifying how hidden logic, hidden expectations, hidden information, and hidden actions emerge due to the interplay of formal and informal institutions. Second, it contributes to the institutional distance literature by demonstrating how informal institutions (e.g., chieftaincy systems) can help bridge sustainability gaps, legitimising sustainability requirements among lower-tier suppliers. Third, it extends research on supply chain governance, underscoring the impact of relationship-driven governance in enhancing sustainability compliance. Finally, the study provides managerial insights by emphasising the role of Tier-1 suppliers as relationship-holders who must navigate institutional complexities, build trust, and leverage informal networks to drive sustainability adoption.

2. Literature Review and Theoretical Background

2.1 Managing Lower-Tier Environmental and Social Sustainability

Managing lower-tier suppliers' environmental and social sustainability is challenging for most focal firms because of the absence of contractual obligations and a lack of power and direct influence over them (Marttinen and Kähkönen, 2022). Moreover, lower-tier suppliers are mostly located in regions with lax regulations and may not have the resources and capabilities to implement sustainability practices (Marttinen *et al.*, 2023; Villena and Gioia, 2018; Wilhelm *et al.*, 2016). In addition, given the frequent changes in buyer-supplier relationship dynamics,

lower-tier suppliers often elude investment in sustainability initiatives (Hannibal and Kauppi, 2019). Hence, it is difficult to enforce sustainability practices across the extended SC (Villena and Gioia, 2018). This is problematic given that the prior literature argues that most environmental and social sustainability misconducts occur beyond Tier-1 suppliers (Villena and Gioia, 2018). Yet, literature on promoting sustainable practices beyond first-tier suppliers remains underdeveloped. While some focal firms adopt a "don't bother" attitude (Tachizawa and Wong, 2014), scholars have also identified multiple approaches to managing sustainability in multi-tier SCs (e.g., Tachizawa and Wong, 2014; Villena and Gioia, 2020). Villena and Gioia (2020) outlined four approaches for managing lower-tier sustainability practices: a direct approach, involving direct monitoring and control; an indirect approach, relying on first-tier suppliers to monitor or collaborate with lower-tier suppliers; a collective approach, involving collaboration with competitors to set industry-wide sustainability standards and monitor suppliers; and a global approach, involving NGOs and international institutions. The effectiveness of these approaches depends on the physical and socio-cultural distance between the SC actors, and the power and knowledge resources available to the firm cascading sustainability (Tachizawa and Wong, 2014).

Accordingly, many focal firms rely on their Tier-1 suppliers to take a double agency role to cascade sustainability upstream (Wilhelm et al., 2016). This role involves combining the fulfilment of their lead firm's sustainability requirements (i.e., the primary agency role) with disseminating these requirements among their suppliers (i.e., the secondary agency role) (Wilhelm *et al.*, 2016). Despite the importance of both roles, little is known about how Tier-1 suppliers communicate, train, and monitor lower-tier suppliers (Villena and Gioia, 2018; Wilhelm et al., 2016) since most studies have focused on the primary agency role. Nonetheless, the literature underscores the impact of socio-cultural institutions and non-economic factors,

such as family, customs and values, religion, and local governance, on the behaviour of individuals and firms in an agency relationship (Lee Park et al., 2022).

Moreover, there is a significant gap in current literature regarding the role of marginalised suppliers in developing countries within the global economy (Kauppi *et al.*, 2018; Zomorrodi *et al.*, 2024). Previous research on SCM in developing countries, emerging economies, and Bottom/Base of the Pyramid/Chain contexts has documented significant institutional voids, including weak regulatory frameworks, limited access to capital, poor enforcement of contracts, and scarce formal information channels (e.g., Silvestre, 2015; El Baz *et al.*, 2019; Zomorrodi *et al.*, 2024). These voids undermine the effectiveness of conventional contractual governance mechanisms employed in developed economies (Silvestre, 2015; Kamoche and Wood, 2023). It is therefore difficult for Tier-1 suppliers to replicate the formal monitoring and contractual governance mechanisms of their Western customers in local buyer-supplier relationships. Scholars argue that '*broadening of the empirical base, particularly to Africa, seems necessary*' (Kolk *et al.* 2014, p. 360) not only to uncover context-specific phenomena, but also to strengthen the capabilities of SC actors in the region (Kauppi *et al.*, 2018).

2.2 African Socio-Cultural Context and SCM

The International Labour Organisation (ILO) reports that the informal sector accounts for almost 83% and 85% of the economy in Africa and sub-Saharan Africa, respectively (ILO, 2022). Thus, a significant part of the SC operates through non-official channels and without government oversight, regulation, or taxation. While existing literature highlights the negative implications of weak formal institutions and the inconsistent enforcement of regulations, it fails to investigate other potential factors at play, leaving a significant research gap (Boso *et al.*, 2023; Zomorrodi *et al.*, 2024). In these contexts, formal and informal hierarchies frequently coexist, and usually interact in substitutive ways (Slade Shantz *et al.*, 2020). International

business scholars have argued that businesses in Africa must manoeuvre a complex web of relationships with formal actors, and informal institutions such as local chieftains, and religious leaders to access critical political and economic resources (Amankwah-Amoah *et al.*, 2022; Boso *et al.*, 2023). A majority of local and multinational enterprises in sub-Saharan Africa rely on relational ties and political networking with informal actors to navigate transaction costs and institutional voids (Amankwah-Amoah *et al.*, 2022).

The legitimacy of informal business landscapes is often determined by prevalent socio-cultural norms, values, and traditions (Abushaikha *et al.*, 2021). For example, in sub-Saharan Africa, these informal actors act as gatekeepers of social legitimacy, shaping buyer-supplier interactions, as well as broader community engagement with firms (Razak *et al.*, 2024). Correspondingly, sustainability in Africa is driven by two factors: (1) historical and socio-cultural characteristics (e.g., collective problem-solving, extended families and communalism); and (2) increasing pressure from Western customers to cascade sustainability through local suppliers (Kauppi *et al.*, 2018). Hence, the secondary agency role of Tier-1 suppliers is especially critical to accommodating the informal structures of local lower-tier suppliers and the formal structures and expectations of Western customers (Hofstetter *et al.*, 2022).

To integrate lower-tier suppliers into global sustainability pathways, buyers must develop and support them (Yawar and Seuring, 2018). However, the literature has yet to explore agency problems that arise when buyers aim to develop the capabilities of lower-tier suppliers and delegate tasks to them in the absence of a formal contract. This is because prior agency studies have been limited to the economic or positivist agency perspectives, which guide contract-based buyer-supplier relationships, leaving non-contractual buyer-supplier relationships under-researched (Matinheikki *et al.*, 2022; Zomorrodi *et al.*, 2024).

Recent research has argued that cultural components might explain why buyer-supplier relationships with fewer/ no contractual obligations are effective in some contexts (e.g.,

Wieland *et al.*, 2020). To understand the secondary agency role it is therefore important to consider the contextual and structural characteristics of lower-tier suppliers (Wilhelm *et al.*, 2016). This present study argues that the prevalent informal business relationships in African AFSCs may provide unique insights that enhance the explanatory power of agency theory beyond the predominantly studied Western contexts. This will require an extended agency perspective – social agency theory (Wiseman *et al.*, 2012) – that accommodates informal, trust-based buyer-supplier relationships. The study provides a background to social agency theory below.

2.3 Social Agency Theory

Social agency theory, an extension of agency theory, emphasises the need to look beyond the explicit contract and consider how specific contractual elements constrain or facilitate principal-agent relationships (Wiseman *et al.*, 2012). This extension broadens the focus beyond private governance mechanisms (via economic incentives and formal contracts) to incorporate publicly available mechanisms (such as the influence of social relationships, cultural norms, and community obligations) into the analysis of principal–agent relations. According to social agency theory, both agents and principals possess socially-influenced interests that may or may not align with conventional wealth maximisation ideologies (Wiseman *et al.*, 2012; Zomorrodi *et al.*, 2024).

Social agency theory builds on traditional agency theory, which is based on the premise of a '*contract between principal and agent*' where the principal delegates an agent to perform a task on their behalf (Eisenhardt, 1989a, p. 59). The focus on the relationship between two autonomous parties with asymmetric information provides a '*natural fit*' framework for examining buyer-supplier relationships (Fayezi *et al.*, 2012, p. 556; Matinheikki *et al.*, 2022). Herein, the buyer (principal) outsources the production of goods or services to a supplier (agent) (Zsidisin, 2022). Agency theory suggests that empowering the agents with decision-

making authority may spark agency problems due to potential misalignments in goals or information (Eisenhardt, 1989a). However, the assumption that agents are inherently opportunistic and self-interested (Eisenhardt, 1989a; Fayezi et al., 2012) is often inadequate in contexts where commercial relationships are deeply embedded in informal institutions and local social norms.

Social agency theory acknowledges that agents and principals may hold socially derived interests, shaped by culture, ethics, and communal obligations, which may diverge from one another or from externally imposed sustainability priorities (Wiseman *et al.*, 2012). This lens facilitates the explanation of a two-sided perspective on the two generic types of agency problems: *adverse selection* and *moral hazard* (Kauppi *et al.*, 2024). While mostly defined as the misrepresentation of the agent's ability to complete the task *ex ante*, and a lack of agent motivation and effort in successfully completing the task *ex post,* respectively (Fayezi *et al.*, 2012; Shevchenko *et al.*, 2020; Matinheikki *et al.*, 2022), scholars recognise the potential of a reverse scenario where the principal behaves opportunistically to the detriment of the agent (Kauppi *et al.*, 2024).

Social agency theory, like traditional agency theory, aims to address these problems by aligning the goals, information, and risk-bearing approaches of principals and agents (Eisenhardt, 1989a). However, with regards to cascading sustainability in multi-tier SCs, outcome-based and behaviour-based mechanisms may be constrained by the geographical and institutional dispersion of SC actors. The dispersion may limit the ability to frequently monitor and verify supplier motivation, competence, and behaviour (Shevchenko *et al.*, 2020), while outcome-based mechanisms may also result in superficial changes instead of embedding sustainability into their operations (Wilhelm *et al.*, 2016). Thus, this study argues that the primary challenges in managing buyer-supplier relationships in African SCs stem from two key forms of distance:

- Cultural distance: Differences in values, norms, beliefs, language and communication styles, attitudes toward authority, trust, individuality, and the importance of work and family between formally organised Tier-1 suppliers and the predominantly informal, community-based supply chain actors.
- Institutional distance: Differences between the formally regulated environments in which Tier-1 suppliers operate and the weak, fragmented institutional frameworks that characterise the informal sector.

These distance-based challenges limit the ability of Tier-1 suppliers to replicate the formal monitoring and contractual governance mechanisms of their Western customers in their local buyer-supplier relationships.

In response, scholars have suggested the use of informal governance based on relational and goodwill trust as alternatives to coercive mechanisms, which may encourage, rather than discourage, opportunistic behaviour among suppliers (e.g., Shevchenko *et al.*, 2020). Yet, the extant literature is silent on how informal mechanisms operate in settings characterised by institutional and cultural distance or how they can effectively replace or complement formal monitoring mechanisms (Fayezi *et al.*, 2012; Shevchenko *et al.*, 2020). To address this, we draw on social agency theory to explore the impact of informal SC relationships on the nature and mitigation of these distances. In doing so, we refer to informal agency relationships as 'social agency relationships' from here onwards; and we investigate the following categories of social agency problems:

- Hidden logic: the '*socially constructed sets of assumptions, values, beliefs, and traditions that shape cognition and behaviour and include an element of intended benefit for the society or local community, but remain invisible to the principals*' (Zomorrodi *et al.*, 2024, p. 5).

- Hidden actions: the agent's intentional pursuit of self-interest when the principal cannot observe their actions;
- Hidden information: the agent's possession of private, context-specific knowledge that the principal cannot readily observe or verify;
- Hidden expectations: the principal's incomplete information about their true preferences and requirements.

3. Methodology

This research adopted an exploratory multiple case study approach to facilitate a comprehensive understanding of how prevalent cultural values and social norms impact sustainability compliance among sub-Saharan African suppliers. Case studies are recommended for investigating complex, real-world phenomena that require rich and in-depth data (Gibbert *et al.*, 2008; Yin, 2018). The triangulation of data from multiple sources such as interviews, observations and documentary analysis generate a detailed understanding of events, interactions, experiences, and processes at various tiers of the SC (Creswell, 2014; Yin, 2018). Given that understanding the relationship between local culture and sustainability is still underdeveloped, this approach ensures quality and rigor, and clarifies spurious relationships.

3.1 Research Design and Case Selection

The dyadic and multi-tier relationships of the upstream actors of Ghana's cocoa and fruit SCs were selected for this study. In addition to the intensive use of resources (such as water, forests etc.) in agriculture to meet the needs of the increasing population, the globalised nature of AFSCs makes it a highly prioritised sector with regards to sustainability issues (United Nations, 2020). Moreover, the primary concern of powerful AFSC actors to enhance their profits, highlights the likelihood of undermining the livelihoods of smallholder farmers in developing countries and protection of the environment (Clapp, 2021).

Ghana's strategic location and favourable business environment makes it a preferred investment destination for multinational agro-processors and hypermarket chains looking to serve the African continent (International Trade Administration, 2023). Many Western companies therefore attempt to embed sustainability in their operations in Ghana through company-led initiatives such as Mondelez's Cocoa Life, Hershey's Cocoa Sustainability Strategy, Nestle's Cocoa Plan, and Blue Skies' Blueprint. Specifically, Ghana is globally recognised as a major supplier of cocoa and fruit crops and is often profiled as an exemplar by global customers and NGOs, given its high quality and effective production and marketing methods (World Integrated Trade Solution, 2021). Furthermore, in June 2022, the EU and the European Investment Bank agreed to contribute €12 million to the Alliance on Sustainable Cocoa initiative in Ghana, aimed at tracing incidents of deforestation, child labour and unfair working conditions to specific cocoa consignments and farms.

Ghana's cocoa and fruit SC contexts present distinct characteristics that could strengthen the analytical depth of the research and support the relevance of theoretical conclusions for other SC contexts (Eisenhardt, 1989b). Specifically, given the prevalence of fragmented smallholder farmers in both SCs, they rely heavily on informal non-contractual, trust-based relationships between Tier-1 suppliers and lower-tier suppliers; and in both cases, farmers are typically local community members while buyers are external actors (Razak *et al.*, 2024). Despite the similarities, there are evident contrasts with regards to product characteristics. Firstly, in terms of perishability and storability, cocoa beans, once dried, can be stored and sold in batches, whereas fruits are highly perishable and must be sold immediately after harvest. Secondly, in terms of market conditions, the cocoa SC is characterised by numerous purchasing clerks operating under licensed buying companies (LBCs), whereas the fruit SC has fewer buyer options, limiting their negotiation power (Minten *et al.*, 2017). Thirdly, activities (including trading) in the cocoa SC are significantly shaped by government

interventions (Kolavalli and Vigneri, 2011), whereas the fruit SC operates with little to no government involvement in buyer-supplier transactions. These characteristics provide a meaningful basis to explore how social agency problems manifest and investigate the governance mechanisms suitable for AFSCs with differing institutional structures and market dynamics.

3.2 Data Collection

The primary source of data for this study was 29 interviews with at least two knowledgeable participants from each tier of the relevant SCs, and at least one participant from the regulatory bodies overseeing those SCs. Subsequently, 4 interviews with other relevant local community stakeholders were conducted – two traditional leaders, and two representatives of NGOs and local advocacy groups. To capture a range of views and perspectives, medium to large size Tier-1 firms from each SC were purposefully selected based on their contributions to Ghana's export volumes and their professed commitment to global sustainability requirements. For this study, the Tier-1 comprised firms that primarily exported raw materials, semi-finished products for further processing, or finished goods (in the case of fruit juices) for final packaging in foreign markets (See Figure 1 and Section 4.1). Hence, Tier-1 included both locally-owned firms and foreign-owned subsidiaries of multinational firms operating in Ghana.

The Tier-1 firms were invited to participate through email and hand-delivered letters. Potential participants were also identified and contacted via their LinkedIn profiles. Consequently, the researchers provided the firms or individuals with further information about the research project, including by explaining the key concepts and objectives of the research. These initial conversations were necessary to ensure the firms assigned the right person with the required knowledge and authorisation. This stage also incorporated suggestions of other relevant sources of information that were not initially considered. For example, the inclusion of the traditional leaders was inspired by these initial conversations. Additionally, this stage

helped build trust and reduce interviewee anxiety, eliciting more thoughtful responses during the interviews (Haukås and Tishakov, 2024).

The Tier-1 firms also served as the gatekeepers that provided access to the farmers in their SC. Farmers who had conducted business with these firms for more than 5 years were briefed about the research and invited to participate through in-person meetings and telephone calls, where necessary. Upon agreeing to participate, their consent was obtained and the mode and timing of the interviews were then agreed and scheduled. The semi-structured interviews were conducted in English and Asante Twi (a local Ghanaian language) via telephone, Zoom, or MS Teams depending on the convenience of the participant. Each interview lasted between 35 and 85 minutes and was audio-recorded with the participants' consent. All interviews were transcribed in English and interviewees were invited to validate the transcripts. Additionally, a member of the research team reviewed the interviews in the local language with participants to confirm the accuracy of the transcripts. The use of open-ended interview questions (see *Appendix 1*) allowed the researchers to vary the approach to each interview by adapting questions during the interview and by adding follow up questions to encourage more detailed responses (Dudovskiy, 2018).

The interview data were complemented with observation notes and secondary data from publicly available documents (e.g., sustainability reports, annual reports, codes of conduct, news platforms). The multiple sources of data were triangulated to corroborate the data and to enrich the information (Eisenhardt, 1989b). Table 1 below presents an overview of the interview details.

[Take in Table1]

3.3 Data Analysis

The resultant data were analysed abductively by moving between the empirical data and literature. The initial stages of the analysis sought to gain familiarity with the data and gather

information on the sustainability goals of the individual firms, including the source of the goals. Hence, the transcribed interviews and secondary documents were read several times, and preliminary notes were taken. The authors individually generated codes, which were then discussed and agreed upon during a debriefing meeting. These first-order codes were subsequently aggregated into more refined themes that represented the sustainability goals identified among the Tier-1 suppliers. The emergent themes were guided by the established constructs in the sustainability literature (Eisenhardt, 1989b). Additionally, any hidden relationships between the SC actors were identified at this stage and appropriately addressed to ensure the reliability of the study was not compromised. For example, two types of relationships between LBCs and processors were distinguished (see Findings). The *QSR NVivo12* qualitative data analysis software package was used for the definition and documentation of codes and themes.

Further, data from each SC was first analysed to reveal the prevalent agency relationships that were necessary to facilitate the cascading of the sustainability goals upstream. This stage of analysis also identified social agency problems and how they were tackled. The aggregated codes for addressing agency problems were independently juxtaposed against the two mechanisms from agency theory (*behaviour- and outcome-based mechanisms*) to explore how internal and external SC actors mitigated agency problems or influenced lower-tier suppliers to adhere to sustainability requirements. The abductive approach ensured codes that inductively emerged from the data were aligned to existing agency theory constructs while allowing new themes to emerge. The socio-cultural elements identified in the behaviour- or outcome-based mechanisms could fit into either category depending on the lens through which it is viewed. Moreover, it was also found to facilitate the effectiveness of the other mechanisms. Hence, the authors agreed to categorise these codes under an inductively generated theme

(*culturally-embedded governance mechanisms*) to delineate the boundaries of the deductive themes.

3.4 Ensuring Validity and Reliability

To ensure the validity and reliability of the study, the measures of trustworthiness in qualitative research were assessed at various stages of the study. This was based on the four measures of quality proposed by (Yin, 2018).

- *Reliability* (i.e., the replicability of the research design and results): The study utilised a well-defined case study protocol, established clear criteria for case selection, and developed a semi-structured interview guideline while documenting all reviewed evidence. A transparent and rigorous coding process was employed during the analysis, with interim results regularly reviewed by the research team.
- *Internal validity* (i.e., establishing cause-and-effect relationships): The study selected the most knowledgeable interviewees from the firms involved, and grounded the research framework in extant literature. Transcripts were validated by participants, and analysis involved iterative movement between empirical data and literature to minimise bias. Alternative codes and explanations were discussed among authors.
- *Construct validity* (i.e., establishing suitability and consistency between the construct and its measurement): To ensure consistency between constructs and measurements, the study employed an exhaustive interview protocol based on extant literature and assured participant anonymity. Data from multiple sources were triangulated, and an abductive coding process allowed receptiveness to emerging themes.
- *External Validity* (i.e., the extent to which the findings can be generalised): The study focused on a highly relevant industry, adopted a multiple case study design, and included external SC players. A replication logic was adopted by using similar

interview protocols with knowledgeable and experienced participants across varying organisation sizes and agency relationships.

4. Findings

This section provides an overview of the agency relationships in the two SCs, examines how social agency problems emerge with regards to achieving sustainability goals, and discusses the approaches adopted to ensure compliance with the stipulated sustainability requirements.

4.1 Identifying the Agency Relationships

4.1.1 Cocoa Supply Chain

The agency relationships identified among the three main tiers in the cocoa SC are illustrated in Figure 1. The two scenarios distinguish between two types of Tier-1 suppliers – (1) processors (PCT1) that supply semi-finished cocoa products to the international market; and (2) LBCs (LBCT1) that supply raw cocoa beans to the international market. The agency relationships were either formal (i.e., supported with a formal purchasing contract) or social (mostly informal through verbal assurances).

[Take in Figure 1]

The dyadic agency relationship between processors and LBCs (PCT1→LBCT2) is usually a formal agreement between two autonomous companies, where the processor (principal) contracts the LBC (agent) to buy cocoa beans from farmers and ensure sustainability adherence on their behalf. This relationship transpires because processors are not licenced to buy cocoa beans directly from farmers (CR2-1,CR2-2,CR2-3). However, to enhance their control over internal market activities and ability to secure cocoa beans that meet their standards, many multinational processing companies have recently vertically integrated to establish LBCs. An interviewee explained that: "*It is a way to dodge a lot of administrative bureaucracies, because some of them don't want to pay a lot of things. What they will do is …*

establish a company under another name, get a license from COCOBOD, get an office in Accra as an LBC; or buy an existing LBC with its existing name and office to buy cocoa beans for them." (AG1). In this scenario, the company has the opportunity to work more closely with farmers, providing them with resources like training on Good Agricultural Practices (GAPs), financing, and access to premium payments through direct mobile payment systems (PCT1-1,PCT1-2,PCT1-3).

The second category of dyadic agency relationships involves an informal agreement between the LBCs (principals) and farmers (agents), i.e., either LBCT1→CT3 or LBCT2→CT3. The LBCs source cocoa beans from individual farmers through their purchasing clerks or from farmer cooperatives. To facilitate yield estimation for the crop season, LBCs typically register their farmers at the start of the farming season. However, there is no contractual obligation requiring farmers to sell their beans exclusively to the LBCs. The LBCs must devise strategies to maintain these relationships. For example, according to LBCT1-2: "*We meet with the pool of farmers annually, and sometimes on a quarterly basis, to directly communicate the sustainability requirements to them or through the purchasing clerks in their communities. To gain their loyalty, we also provide them with premiums and farm inputs, which even attracts farmers registered with other companies.*"

4.1.2 Fruit Supply Chain

As depicted in Figure 1, dyadic agency relationships in the fruit SC (FT1→FT2) exist between either packers & exporters, or processors (i.e., principals) and the farmers (i.e., agents). Herein, the principals (FT1) outsource the cultivation of fresh fruits to the agents (i.e., FT2). The role of the farmers in the overall sustainability goals of the principals is emphasised by FT1-5: "*At* [anonymised], *we are passionate about delivering the best quality fruit and we would not be able to do this without the loyalty and expertise of our farmers. We are committed to providing continuous training and support so that they are able to reach the high ethical, environmental,*

and agricultural standards required to work with us and our customers." Accordingly, the principals require the agents' adherence to stipulated environmental and social standards in their cultivation.

The two categories of Tier-1 suppliers rely on mainly independent smallholder farmers (FT2) engaged in the cultivation of fruits, including pineapples, papaya, and mango. However, some Tier-1 suppliers have vertically integrated their operations, acquiring and controlling their own farms, as explained here: "*Our fruits are sourced from registered growers in Ghana, Egypt,* […] *and we recently began our own farms* [to augment the supplies from the registered farmers]. *We process mainly for retail brands in the European market including UK, Holland and Switzerland, but we also have some ownership/control over some wholesale and retail of the final product in the local market within Ghana.*" (FT1-1).

4.1.3 Comparison of governmental influence: cocoa SC versus fruit SC

The study identified two divisions (CR1 and CR2) of the Ghana Cocoa Board (COCOBOD), the government's primary regulatory body for the cocoa industry, as active participants in the post-harvest activities of cocoa production. CR2 holds an oversight authority over multiple tiers of the cocoa SC (CR2-1,CR2-2,CR2-3). According to a Monitoring & Evaluation Officer at CR2: "*We issue licenses to both local and multinational LBCs to purchase cocoa beans from farmers on our behalf. The raw beans are mostly exported to the international markets, to be processed into cocoa liquor, butter, paste and powder, and mixed with other ingredients to make chocolate. But you remember the government is bent on adding value locally to boost the economy; so, some domestic processors also process cocoa in Ghana before export.*" (CR2-1). All interviewees in the cocoa SC acknowledged CR2's role in regulating and facilitating relationships between processors, LBCs, and farmers in the internal market, such as by fixing farm gate prices to ensure fair compensation and eliminate the possibility of exploitation by the bigger internal market actors (LBCT2-1,LBCT2-2,LBCT2-3). CR1 supports CR2's role by

inspecting, grading, and sealing the beans, as well as fumigating and disinfesting them during storage and transit to maintain Ghana's premium cocoa beans standards.

In contrast, there was limited direct participation of governmental agencies in the fruit SC beyond general regulatory mandates. As one interviewee noted: "*I think there is efficiency in our firm and across our SC, because we have international customers, and international regulators such as BRC that set high standards for us to meet. However, there are no local governmental specifications and supervision specific to fruits except the lump of mechanisms applicable to all food SCs in Ghana.*" (FT1-2). The study identified two relevant governmental agencies: FR1, which oversees the operations of all firms that process, manufacture, or import food products; and FR2, responsible for plant protection services like pest/disease control, seed certification, pesticide and fertilizer management, and quarantine services.

4.2 Sustainability Goals and the Sources of Social Agency Problems

The data suggests that Tier-1 suppliers in both SCs face a range of sustainability requirements that serve as prerequisites for global market entry. These sustainability requirements are stipulated by their Western customers, governmental agencies of the importing country, or third-party agencies (PCT1,LBCT1,FT1). In addition, the local government regulatory bodies mentioned above were also found to stipulate generic sustainability requirements to support agricultural development and international standards compliance (PCT1-1,PCT1-2,CR1,CR2,FT1-4,FT1-5). For example, according to CR1-1: "[…] *to help maintain the high standards of Ghana's cocoa beans and attract premium prices, we ensure sustainability is adhered to and help identify any compromises along the supply chain*". Thus, each Tier-1 supplier had a sustainability framework to address specific sustainability issues along their SCs. These included a range of environmental and social sustainability goals/targets, as shown in Table 2. They emphasised their commitment to sustainability through a designated job

position for sustainability-related duties, rolling out sustainability initiatives, and publishing periodic reports and newsletters that spelt out their targets with corresponding timelines.

[Take in Table 2]

The four categories of sustainability goals/targets identified in Table 2 were evident in both SCs – indicating the importance of both social and environmental sustainability in both contexts. However, the approach and priorities differed. For example, the fruit SC, through its partnerships with customers in Europe, were actively involved in developmental projects in the rural farming communities (FT1-1,FT1-3,FT1-4). Yet, in contrast to the broader emphasis in the cocoa SC, there was no explicit focus on financial inclusion or income diversification to enhance the farmers' livelihood. In both SCs, the data suggests that farmers were partially informed on the scope of sustainability and mainly described it as "*taking care of the environment*" (CT3-1). Hence, the Tier-1 firms acted as catalysts, transforming the SC towards the broader scope of sustainability – either incentivising or compelling lower-tier suppliers' towards stipulated environmental and social standards.

Notwithstanding the disparities in individual sustainability goals in the agency relationships between autonomous processors and LBCs, the data suggests that there was minimal goal conflict. This is because both parties were directly governed by CR2's specifications, which provided a merging point for the individual sustainability goals of the principals and agents (PCT1-1,PCT1-2,PCT1-3,LBCT1,LBCT2-1,LBCT2-2). However, the vertically integrated companies had an information advantage over their counterparts. The importance of the vertically integrated operations is emphasised by this quote: "*By eliminating the need for autonomous intermediaries between the farmer and us* [the processor], *we streamline our SC, improve the efficiency of our operations, and reduce transaction costs. We have full knowledge of our LBCs operations and can confirm we all adhere to the same high sustainability standards and can also verify the sustainability claims of farmers.*" (PCT1-4).

In contrast, the data revealed that prevalent cultural and institutional disparities triggered social agency problems in the buyer-supplier relationships involving farmers. Although most smallholder farmers relied on this relationship for >70% of their household incomes, they were pessimistic about venturing into practices that offered no guarantee of success (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3). A farmer argued that: "*This* [farming] *is all my family depends on and I have been doing it all my lifetime. It is going well, so if a stranger brings any new resources, competence and expertise, I won't just accept it because it is free, what if it fails? For a venture like this, it is better when the person can be trusted*." (CT3-2). Moreover, farmers assumed that principals' sustainability requirements were externally driven and focused on meeting the demands of their Western customers rather than addressing local farming realities. Meanwhile, most foreign-owned multinational firms perceived local knowledge and farming practices as unsustainable, requiring farmers to abandon their time-honoured methods in favour of Western-influenced practices that offered no guarantee of success (PCT1-2,PCT1-3,LBCT1-1,LBCT2-1). These factors fostered the emergence of social agency problems – as summarised in Table 3.

[Take in Table 3]

While the two SCs had similarities (e.g., the prevalence of fragmented smallholder farmers, informality and non-contractual, trust-based relationships), their product characteristics, market concentration, and degree of government involvement contributed to variations in the manifestation of social agency problems. For instance, the perishability of fruits intensified the time sensitivity of transactions, heightening the risk of hidden actions among farmers such as skipping certain quality checks, and misreporting harvest dates to avoid loss. According to a fruit farmer: "*When your pineapples are ripe, and demand is made from the buyer, we sometimes have to skip certain processes to ensure the harvest to processing time meets the 24-hour threshold of the processor.*" (FT2-1). Meanwhile, the presence of numerous

purchasing clerks operating under LBCs in the cocoa SC provided greater flexibility in switching buyers but influenced the nature of hidden expectations, where farmers are uncertain about the timing, quality, or specific sustainability requirements of their ultimate buyer. Government involvement in the cocoa sector (see Section 4.1.3) reduced hidden expectations by clarifying minimum sustainability requirements and ensuring fair compensation. However, this involvement introduced administrative layers that facilitated hidden information, as buyers are not directly bound in a relationship with farmers or purchasing clerks and hence could not directly observe whether compliance was being maintained. These contrasts underscore how contextual features shape the dynamics of social agency relationships and the suitability of governance mechanisms.

4.3 Mitigating Social Agency Problems and Ensuring Sustainability Adherence

The data suggests that a combination of behaviour-based and outcome-based governance mechanisms are employed to mitigate agency problems. The behaviour-based mechanisms focus on guiding or monitoring agents' actions to align them with the principal's goals, emphasising processes and trust-building over measurable outputs. The outcome-based mechanisms aim to align the goals and interests of both principals and agents by tying rewards or penalties directly to measurable outputs, to incentivise both parties to work towards the achievement of specific sustainability goals. In addition, governmental regulatory requirements were also found to be outcome-based since they primarily dictate compulsory outcomes for both processors and LBCs. Table 4 provides a summary of the strategies identified under each category.

[Take in Table 4]

A third category of strategies was identified: labelled culturally-embedded mechanisms. These mechanisms, grounded in social norms, relational agreements, and indigenous practices enable SC actors to bridge the cultural and institutional (administrative)

distances between them. Given the source of agency problems in this context, conventional governance mechanisms – whether behaviour-based or outcome-based – require culturally-embedded governance mechanisms to thrive effectively amidst institutional voids and structural disparities. The discussion below focuses on these strategies to highlight the critical role of tailored governance mechanisms in fostering collaboration and enhancing the overall objective of tackling agency problems.

4.4 *Culturally-embedded Governance Mechanisms*

The data suggests that both environmental and social sustainability practices were embedded in local socio-cultural practices that have been passed down and used successfully for generations. The farmers argue that stewardship, and working in harmony with the land and its custodians, was the premise of their farming practices. Thus, they focused on ensuring long-term productivity (i.e., sustainability), whereas other sustainability issues were more of an ancillary concern for their buyers (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3). Specifically, some environmental sustainability requirements were embedded in age-old farm practices such as planting shade trees on farms (CT3-1,CT3-2,CT3-3), leaving farmlands fallow (CT3-1,FT2-1,FT2-2), restricted farming, hunting and tree-cutting in protected forests (LBCT1-1,CT3-1,CT3-2,CT3-3), installing animal habitats (FT1-4,FT1-5,FT2-1,FT2-3), crop rotation (FT2-1,FT2-2,FT2-3) (i.e., biodiversity conservation); and harvesting rainwater (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3), judicious use of water (CT3-1,CT3-2,CT3-3), harvesting crops in batches (FT2-1,FT2-2,FT2-3), converting farm wastes into manure and soap (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3), and adopting mixed farming methods (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3) (i.e., sustainable use of resources). Similarly, the social sustainability requirements were embedded in cultural requirements to treat each other with respect, fairness and trust; returning value to the community (CT3-1,CT3-2,CT3-3,FT2-1,FT2-3) (i.e., empowering farmers and employees); and collectivism and communal enterprise (CT3-1,CT3-

2,CT3-3,FT2-1,FT2-2,FT2-3), including purchasing from and selling to 'local' people (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3) (i.e., community engagement and social wellbeing).

Farmers argued that the perception that they were a sustainability risk was because global sustainability requirements are usually generic and framed in a Western-based context. According to a farmer: "[…] *I can say these methods* [unsustainable practices] *actually conflict with our farming philosophy. We didn't use fertilizer and all these chemicals until the buyers came with this modern, industrialised mindset which required the use of fertilizers and pesticides.*" (CT3-2). The culturally-embedded strategies necessary to bridge the gap between the underlying perceptions and expectations of Western customers and African suppliers, ensuring compliance are discussed below.

4.4.1 Translating the stipulated sustainability requirements

Bridging the gap between principals' sustainability expectations and agents' perceptions requires the translation of sustainability requirements into understandable local practices. This process helps mitigate agency problems by clarifying what is required of agents, allowing them to make informed decisions on their capability, and enabling principals to adapt their goals to local realities. A farmer remarked: "*I think our interactions with the environment people* [sustainability representatives of buyers] *has improved recently. We don't see them as a nuisance any longer and we understand that some of the knowledge is for our own good and our children's future. Trees have always been an important part of us, so I think no farmer will reject this initiative if you break it down for them*" (CT3-3).

The study identified three modes of translation: aligning sustainability requirements with social norms and customs; presenting them as improved agronomic practices to boost productivity; and framing them as mandatory market requirements. Farmers were more receptive to the approach of aligning sustainability requirements with social norms and customs – as these sustainability practices aligned with their indigenous methods. All interviewees from

LBCT1 and LBCT2 noted that most farmers viewed the introduction of mandatory sustainability requirements as one-sided, benefitting only the principals. Hence, when sustainability was framed as a mandatory requirement, farmers often resisted by seeking alternative buyers or engaging in unethical practices such as smuggling and deception (LBCT1-1,LBCT2-1,LBCT2-2,LBCT2-3,FT1-1,FT1-3). In essence, the translation process encourages the participation of farmers in determining relevant environmental and social targets, which fosters a shared understanding and ownership of sustainability goals.

4.4.2 Employing purchasing clerks from farmers' community

Community-based purchasing clerks strengthen social ties, foster trust, and reduce opportunistic behaviours, as they understand the cultural nuances and unique challenges of their farmer base (CT3-1,CT3-2,CT3-3). A District Sustainability Manager explained: "*Our purchasing clerks are just like the farmers in various ways. So, they easily build local connections within the community and integrate the community members into the sustainability process. Maintaining good relationships with farmers helps us achieve our volumes despite the increasing competition, and it's easier to convince farmers into accepting the sustainability requirements*" (LBCT2-2). Hence, in the cocoa SC, hiring purchasing clerks from farmers' communities significantly enhances the relationship between LBCs and farmers.

Farmers stated that they are more likely to sell their cocoa beans to familiar individuals rather than "*strangers*" because community-based clerks are less likely to act opportunistically, given their familial and communal ties to the farmers themselves (CT3-1,CT3-2,CT3-3). This practice also upholds the LBC's integrity and fosters goodwill, as clerks focus not just on purchasing large volumes but ensuring adherence to quality and sustainability standards. Additionally, communities feel valued and are more likely to support the LBC's development initiatives, further strengthening long-term relationships.

4.4.3 Engaging community traditional leadership

Traditional leaders, including chiefs, community elders, and family heads, play a crucial role in governance and decision-making at the community level, particularly in influencing behaviour and fostering collective responsibility for sustainability goals. The data suggests that they provide local legitimacy to initiatives introduced by Tier-1 suppliers, NGOs, and government agencies, ensuring community buy-in. A District Sustainability Manager explained: "*We don't do it alone* […] *Before we go into any community with our initiatives, we do something called community entry, where we introduce ourselves to the chiefs, and other opinion leaders like assembly members and unit committees, and make them aware of our mission in their community. They scrutinise the initiative and mobilise the people to partake in the activity*" (PCT1-3).

Early involvement of traditional leaders helps incorporate a cultural perspective in sustainability discussions and tailor sustainability requirements that fit the context (LBCT1-1,LBCT2-1,LBCT2-2,LBCT2-3). Traditional leaders facilitate participation in programs such as land registration, child labour remediation, and sustainable farming, incorporating cultural perspectives to tailor sustainability requirements. They also mediate disputes over payments, land ownership, and labour issues, mitigating agency problems by ensuring fair and equitable resolutions. Additionally, their role in overseeing farmland registration and ownership allows farmers to secure long-term land tenure, encouraging investment in sustainable practices.

4.4.4 *Adopting restorative justice mechanism*

Restorative justice practices were widely used between farmers and LBCs to resolve disputes and maintain relationships, favouring reconciliation over punitive measures. This approach addresses underlying issues rather than assigning blame, promoting trust and harmony in agency relationships. Farmers trust these community-based resolutions, which ensure fairness and prevent marginalisation. For example, when cocoa beans are rejected for poor quality, LBCs do not demand refunds from farmers. Instead, purchasing clerks rectify the issues to

preserve relationships and enhance the LBC's competitiveness. As one LBC representative explained: "*Our purchasing clerks rarely reject cocoa beans or return bad cocoa beans. Instead, they have their own mechanisms on-site that they follow to upgrade the cocoa beans to an acceptable level of quality. The purchasing clerks sort out the bad cocoa beans, grade them accordingly, and sometimes ensure they dry the cocoa beans to the accepted moisture level.*" (LBCT2-1).

Purchasing clerks also increase farmer sensitisation to prevent future issues, such as promoting the use of banana and plantain leaves to improve the aroma of cocoa beans. This restorative approach strengthens agency relationships and ensures long-term adherence to sustainability practices out of a sense of obligation and trust, rather than fear of punishment.

4.4.5 Regular engagement with farmers

Regular engagement between principals and agents plays a crucial role in reducing information asymmetry. Direct conversations, open dialogues, and regular check-ins provide principals with real-time insights into farmers' progress, challenges, and needs, while allowing farmers to voice concerns and request support. A Traceability Officer in the cocoa SC noted: "*To achieve the trust of farmers and their communities, it is important to build trust. Our frequent visits, and face-to-face interactions with the farmers help clear doubts and improve our relationship, identify their immediate needs to provide tailored training, guidance, and support*" (LBCT2-1). This was essential in guiding principals to make informed decisions on the allocation of resources to support adherence to their sustainability initiatives.

Engagement occurs at both individual and community levels, with farmers preferring the latter for its collective benefits. As one farmer explained: "*As cocoa farmers, we see ourselves as brothers, you can't compete or operate with these companies* [LBCs] *in isolation. It is the brotherhood that gives us a voice and ensures the buyers understand our plight*" (CT3-2). The community-level approach amplifies farmers' influence and ensures their concerns are

collectively heard. For principals, such engagement provides trusted, contextualised information that enables responsive and impactful decisions, fostering collaboration and supporting sustainability goals.

4.4.6 Gifting

Gifting, both giving and receiving, is a deeply rooted cultural practice that fosters trust, strengthens social cohesion, and aligns individual and collective goals. Through modest offerings, such as cash or farm products, farmers express gratitude for the relational and supportive nature of their interactions with principals. A farmer explained: "*It is the right thing to do. If someone travels to your community to offer any form of support, they deserve to feel welcomed and appreciated. The money* [salary] *is not enough, many people are paid more than them, but they sit in an office and don't step foot here.*" (FT2-2). Similarly, principals' representatives who accept these gifts acknowledge farmers' appreciation for their knowledge-sharing efforts.

These exchanges go beyond material value, symbolising mutual respect and investment in the relationship, reinforcing the spirit of community. This discourages opportunistic behaviour and fosters goodwill and reciprocity.

4.4.7 Attending community gatherings

Attending social events in local communities, such as festivals, funerals, and naming ceremonies by the principals' representatives demonstrates respect for local customs and builds personal connections with farmers, fostering goodwill and trust (CT3-1,CT3-2,CT3-3,FT2-1,FT2-2,FT2-3). Farmers appreciate when principals sponsor or attend their events, feeling valued and more inclined to align with sustainability goals and directives. As one representative noted: "*These farmers don't demand much, just show concern and they will trust your directives* […] *I remember last year our regular customer who agreed to sell his cocoa beans*

to us, sold it to someone else because he donated towards his relative's funeral and we didn't. […] *yes, it's very easy to travel back empty-handed*" (PCT1-1).

This is also evident with regards to the adoption of sustainability practices as farmers are more inclined to align with and support principals who have shown a genuine interest in their affairs, not just their business relationship. Such participation strengthens relationships, fosters reciprocity, and reduces hidden actions as farmers view the principals' visibility in their communities as a sign of long-term commitment to their well-being.

4.4.8 Informal visits

Informal visits by principals, such as touring farms, processing facilities, or visiting farmers' homes, play a significant role in strengthening relationships and fostering collaboration. Unlike formal audits, these relaxed interactions allow agents to engage more freely with decision-makers, providing principals with practical insights into their practices. A District Sustainability Manager explained: "*I usually give our visiting customers and partners a tour of the farms and the opportunity to observe and interact with the farmers. Recently a delegation from the Danish Foreign Ministry visited my district, and the farmers took the opportunity to showcase their craftsmanship and dedication to producing high-quality and sustainable cocoa.*" (PCT1-3). These visits build trust and create opportunities for farmers to contribute to decision-making processes by sharing their experiences and needs. This approach encourages mutual understanding and ensures that principals' strategies are better aligned with the realities faced by agents, paving way for more inclusive and effective sustainability initiatives.

In summary, these strategies are pivotal in achieving farmer buy-in and mitigating agency problems. Given that agency problems were mainly caused by the disparity in underlying perspectives and farmer pessimism, these strategies were essential to: (1) bridge the gap in sustainability perspectives; (2) encourage collaboration and reciprocity; and, (3) foster a sense of responsibility among lower-tier suppliers to fulfil and document sustainability

practices. Together, these approaches reduce the cultural and institutional distance between principal and agent, fostering a collaborative environment in which principals and agents can align goals and work towards shared sustainability objectives, minimising the risks of hidden action, hidden expectation, hidden information, and hidden logic.

5. Discussion

This study explains how the implementation of sustainability initiatives in Ghana's cocoa and fruit SCs is impacted by the prevalence of fragmented smallholder farmers, informality and the weak formal institutional oversight of lower-tier suppliers. These structural characteristics have been identified in prior studies of sub-Saharan Africa (Razak *et al.*, 2024) and other developing countries including Brazil (de Lima *et al.*, 2025) and Pakistan (Khan *et al.*, 2025). This indicates that the dynamics observed in Ghana are not context-bound but instead represent structural challenges inherent in many AFSC settings. In addition, characteristics specific to either the cocoa or fruit SC also provide common ground with other products, which further aids in understanding the applicability of our findings. For example, we concur with Durach et al. (2025) that suppliers in perishable AFSCs often face time pressure to sell their products before their expiration; and we further illustrate how this leads to hidden actions such as skipping quality checks. Durach et al. (2025) and de Lima et al. (2025) also noted that AFSCs with limited buyer competition or a few powerful buyers often compel suppliers to accept buyers' policies and price penalties. We further these arguments by explaining that this constrains supplier bargaining power and increases the risk of buyer opportunistic behaviour, thereby exacerbating the economic vulnerability of farmers and hindering their capacity to invest in sustainability. However, we also found that buyers' "*excessive power use*" (de Lima et al., 2025, p. 558) could be mediated by active government regulation and price-setting in Ghana's cocoa sector.

Prevalent institutional voids, such as weak financial and legal institutions, and the inconsistent enforcement of rules and regulations represent a significant differentiator between SCM in many developing or emerging African countries and in other more developed economies (El Baz *et al.*, 2019). The inconsistent enforcement of rules and regulations by formal institutions limits government oversight especially in the informal sector (Boso *et al.*, 2018). This magnifies the influence of informal institutions represented by local chiefs, opinion leaders, religious leaders, and some non-governmental advocacy groups. In essence, farmers' activities are predominantly shaped by informal institutions, while Tier-1 suppliers are mostly under formal government oversight and must comply with international sustainability standards, legal frameworks, and certification requirements to maintain business with their Western customers. Thus, even though both Tier-1 suppliers and their lower-tier suppliers operate within the same national context, they function under vastly different institutional frameworks and regulatory expectations – creating institutional distance.

Informal institutions, particularly chiefs, hold substantial influence in this context due to their visibility, longevity and ability to define acceptable behaviours (Boso *et al.*, 2023; Razak *et al.*, 2024). This magnifies the impact of socio-cultural norms, beliefs, languages, and unwritten laws within rural farming communities. These cultural elements are ingrained in the farmers' sustainability practices and their local communities, and may not naturally align with formally documented sustainability requirements and practices (Durach et al., 2025; de Lima et al., 2025), creating cultural distance between Tier-1 suppliers and their local suppliers. Consequently, the reasoning behind farmers' behaviour may be unknown to individuals and organisations outside these local communities, resulting in hidden logics. Moreover, farmers are likely to be unaware of or uninterested in formally stipulated requirements that have limited accessibility to the predominantly poorly educated smallholder farmers, increasing the likelihood of hidden expectations. Cascading global sustainability requirements often requires

a shared understanding of objectives, which is limited in this context due to cultural distance. Thus, the study proposes:

P1: *Cascading sustainability practices in African AFSCs is hindered by the interplay of formal and informal institutions, which creates cultural and institutional distances between principals and agents, leading to social agency problems.*

Despite the non-contractual nature of these relationships, the findings emphasise that Tier-1 suppliers who transition from transactional, arm's-length relationships to more collaborative, arm-in-arm relationships with smallholder farmers over time, gain better control and increased transparency. Durach et al. (2025) argues that long-term, trust-based engagement with farmers enables the better alignment of production practices with sustainability objectives, even in resource-constrained contexts. Coercive approaches to sustainability enforcement will fail if individual firms and the SC as a whole do not possess the necessary resources, competences and capabilities (Durand *et al.*, 2019; Gold *et al.*, 2010; Villena *et al.*, 2021). Moreover, de Lima et al. (2025) highlight that perceived fairness and procedural justice in buyer-supplier relationships can strengthen supplier willingness to adopt sustainability standards. This highlights the pivotal role of Tier-1 suppliers as "relationship-holders" who, rather than coercively transmitting sustainability requirements among suppliers, must build trust-based relationships and collaborate with smallholder farmers to bridge knowledge gaps and formalise their sustainability practices.

Furthermore, Tier-1 suppliers can operate at both cultural and institutional distance by strategically leveraging ties with both formal and informal political institutions (Boso *et al.*, 2023). While formal institutions (e.g., governmental bodies) facilitate the enactment and enforcement of sustainability requirements in line with international market requirements, they often lack the reach and cultural legitimacy for deep local adoption (Durach et al., 2025). Informal institutions, particularly local chieftains, can drive local-level compliance and

legitimacy by embedding sustainability requirements within the wider socio-cultural norms and values. This enhances local buy-in and bridges cultural distance between foreign sustainability requirements and indigenous farming practices (Silva *et al.*, 2025). These chieftains possess the moral and social authority to sanction non-compliant individuals and organisations within their communities (Boso *et al.*, 2023), making them powerful enablers of sustainability adoption. By combining the authority of formal institutions with the embedded influence of informal leaders, Tier-1 suppliers can reduce cultural distance, clarify hidden expectations, and address institutional voids that hinder sustainability implementation in AFSCs. Thus, the study proposes:

P2a: *In the absence of contractual obligations, Tier-1 suppliers that transition from transactional to collaborative relationships with smallholder farmers gain greater transparency and influence over sustainability compliance, mitigating social agency problems of hidden information and hidden action.*

P2b: *The involvement of informal governance actors, such as local chieftains, enhances sustainability adoption among lower-tier suppliers by bridging the cultural distance via embedding formal sustainability requirements within existing community norms.*

P2c: *Strategic ties with both formal and informal institutions bridge the institutional distance by ensuring the enactment of aligned sustainability requirements through formal institutions while enhancing legitimacy and supplier buy-in through informal institutions.*

Across Ghana's farming communities, social norms emphasise shared responsibility, reciprocity, and social cohesion. Hence, social and economic relationships are embedded in collective well-being rather than purely transactional exchanges. This research expands the traditional view of agency roles, supporting Soundararajan and Brammer's (2018) argument that Tier-1 suppliers in emerging markets take on a governance function beyond their contractual obligations. By positioning Tier-1 suppliers as both compliance facilitators and

cultural translators, the study extends agency theory to account for culturally embedded governance mechanisms, which function alongside formal governance structures to shape sustainability outcomes in informal SCs. This questions traditional agency theory's assumption that agents act primarily out of self-interest and opportunism (Bosse and Philips, 2016). The findings suggest that agency problems may arise from hidden expectations (due to the ambiguity of the principal's true preferences) and hidden information in buyer-supplier relationships (Kauppi et al., 2024). Thus, bridging farmers' indigenous knowledge and stipulated sustainability requirements offers an effective pathway to mitigating sustainability breaches, ensuring both compliance and local legitimacy.

6. Conclusions

This study contributes to the literature on sustainable SCM by highlighting how the interplay between formal and informal institutions shapes sustainability implementation in Ghana's AFSCs. Specifically, the paper highlights how institutional and cultural distances between Tier-1 suppliers and smallholder farmers induce social agency problems – hidden logics, hidden expectations, hidden information, and hidden actions – that hinder sustainability transitions. The findings extend prior research on institutional distance in global SCs (Boso *et al.*, 2023; Wieland *et al.*, 2020) by demonstrating that institutional duality – the coexistence of formal and informal governance mechanisms – can reinforce rather than resolve these agency problems if misaligned. While prior studies emphasise formal governance mechanisms, such as third-party certifications and contractual enforcement (Durand *et al.*, 2019; Gold *et al.*, 2010), this research reveals that sustainability adoption in AFSCs is largely mediated by informal institutions. Thus, by empirically demonstrating how informal institutions, such as local chieftains, opinion leaders, and religious leaders, play a pivotal role in legitimising sustainability practices, this paper suggests that rather than viewing informal institutions as

obstacles to sustainability transitions, they can be strategically leveraged to bridge institutional and cultural distances, reducing verification challenges and enhancing supplier buy-in.

This research contributes to the ongoing development of social agency theory (Wiseman et al., 2012) and its research implications for OSCM (Zomorrodi et al., 2024) by illustrating how buyers' (principals) and suppliers' (agents) interests are shaped by socially derived norms rather than solely by economic self-interest. We show that governance in informal AFSCs requires the integration of formal enforcement and culturally embedded legitimacy-building mechanisms. This advances research on sustainability governance in emerging market contexts (Soundararajan and Brammer, 2018; Boso *et al.*, 2023). Additionally, the comparative analysis of cocoa and fruit SCs reflects structural patterns documented in other AFSCs globally (Durach et al., 2025; Khan et al., 2025; de Lima et al., 2025), strengthening the theoretical generalisability of this study. Concurrently, these parallels suggest that it is not merely the commodity type (e.g., cocoa *vs*. fruit) but rather the interplay between formal and informal institutional structures, market dynamics, and product characteristics that determine how agency problems emerge and should be addressed. Additionally, by emphasising the role of external SC actors, this paper reinforces agency theory's suitability beyond dyadic relationships (Matinheikki *et al.*, 2022).

6.1 Managerial Implications

To managers, particularly Tier-1 suppliers, the findings underscore the need to go beyond compliance-driven enforcement to address social agency problems and advance sustainability in global SCs. Managers must consider governance mechanisms that align with the local culture and prioritise facilitating long-term, trust-based relationships through strategies that are culturally relevant and add the farmers' voice to decisions. Appropriate strategies include employing purchasing clerks from the local community, attending communal events, and

engaging traditional authorities. These approaches signal long-term commitment to local farmer welfare, fostering loyalty and collective commitment towards sustainability goals.

The inappropriate exertion of power and pressure by the acclaimed powerful firm may result in negative reciprocal behaviours, and social agency problems. Hence, Tier-1 suppliers must act as "cultural translators" by aligning sustainability requirements with indigenous practices, investing in farmer capability-building programs, and proactively addressing hidden expectations and cultural logics. In perishable AFSCs, managers should be acutely aware of context-specific constraints that can amplify hidden actions, such as a heightened time pressure, and design governance mechanisms accordingly.

To farmers, this study provides an important bridge from their longstanding, indigenous knowledge and practices to the much-talked about sustainability requirements. Contrary to the narrative that modern, industrial agriculture is the only path forward to achieving sustainable SCs, this study suggests that global decision-makers may need to consider the untapped local, experiential knowledge of these farmers.

6.2 Policy Implications

From a policy perspective, the study highlights the importance of formally recognising the role of informal institutions, such as local chieftains, in enforcing sustainability standards. To improve compliance, legitimacy, and farmer buy-in, policymakers should develop programs that bridge formal regulatory systems with informal community governance. In parallel, investment in training and financial inclusion is necessary to address capability gaps among smallholders. International policymakers and buyers can also collaborate with Ghanaian authorities to provide fair compensation, and facilitate farmer access to finance and market information. This may be boosted by engagements with local informal institutions – such as chieftains, community opinion leaders, and religious leaders – to limit politicisation and enhance both inclusiveness and farmer ownership of policies. Such joint action would align

local socio-cultural dynamics with global sustainability standards, reducing the cultural and institutional distances that fuel social agency problems.

In addition, in the fruit sector, where government involvement is minimal, targeted policies to protect farmers from potential opportunistic buyer behaviours are necessary. Establishing sector-specific sustainability standards and supporting a traceability infrastructure could provide a more unified direction for farmers, eliminating cases of farmers being torn between the sustainability requirements of multiple potential buyers. Also, governmental agencies like the Plant Protection and Regulatory Services Directorate (PPRSD) could be empowered with the financial and technical resources necessary to monitor compliance effectively.

6.3 Limitations

This study focuses on lower-tier suppliers in rural, close-knit African communities where informal institutions and socio-cultural norms are very conspicuous. However, urban populations tend to be more individualistic, a distinction not unique to Africa. Future research could explore whether rural populations in Western and other non-African contexts similarly prioritise communal values in sustainability transitions.

Additionally, like most sustainable SCM studies, this research focuses on environmental and social sustainability dimensions. Future studies could examine the financial viability of sustainability transitions for lower-tier suppliers, highlighting trade-offs between short-term costs and long-term benefits to provide a more holistic understanding of how financial incentives and economic sustainability interact with social and environmental priorities in AFSCs.

Finally, this study advances theoretical discussions on institutional duality in SCs while offering actionable insights for firms seeking to implement sustainability in culturally and institutionally distant contexts. Future research should explore the dynamic evolution of these

governance mechanisms and the conditions under which formal and informal institutions complement or substitute each other in global SCs, as well as the potential risks associated with the informal governance of sustainability initiatives.

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Table 1 – Overview of Interviews and Other Sources of Data

SC Tier	Category		Informant (years in firm)	Firm Size*	Age of business (years)	Interview Language	Interview Duration (minutes)	Other sources of data
Cocoa Supply Chain								
Tier 1	Processors (PCT1)	PCT1-1	Operations Manager (7)	>500	46	English	70	Annual Report; Sustainability Report
		PCT1-2	SC & Quality Manager (8)	150	24	English	60	Firm's Website
		PCT1-3	District Sustainability Manager (5)	>500		English	50	Firm's Newsletter
		PCT1-4	Quality Assurance Officer (6)	>500	18	English	65	Sustainability Report
	Licenced Buying Companies (LBCT1)	LBCT1-1	Sustainability Manager (8)	>500	34	English	68	Sustainability Report
		LBCT1-2	District Sourcing Manager	>500	32	English & Twi	40	-
Tier 2	Licenced Buying Companies (LBCT2)	LBCT2-1	Traceability & Standards Officer (6)	>500	32	English	55	Code of conduct; Sustainability Report
		LBCT2-2	District Sustainability Manager (4)	>500	27	English	75	Firm's Website
		LBCT2-3	Community Development Manager (12)	>500	27	English	60	Firm's Website; Sustainability Report
Tier 3	Farmers (CT3)	CT3-1	Farm Owner (8)	5	10	English	69	-
		CT3-2	Farm Owner (17)	5	19	Twi	50	-
		CT3-3	Farm Manager (10)	22	27	Twi	65	-
Governmental Bodies	Regulatory Bodies (CR1)	CR1-1	District Technical Officer (15)	>500	72	English	64	Firm's Website
		CR1-2	Standards Administrator (5)	>500	23	English	55	Firm's Website
	Marketers & Exporters (CR2)	CR2-1	Monitoring & Evaluation Officer (10)	>500	72	English	65	Annual Report; Sustainability Report
		CR2-2	Risk Manager (15)	>500	72	English	50	
		CR2-3	Warehouse & Port Operations Officer (8)	>500	72	English	56	
Fruit Supply Chain								
Tier 1	Packers & Exporters (FT1)	FT1-1	General Manager (4)	>500	27	English	60	Annual Report; Sustainability Report
		FT1-2	Quality Manager (6)	>500	16	English	45	Sustainability Report
	Processors (FT1)	FT1-3	Process & Logistics Analyst (8)	>500	28	English	65	Sustainability Report; Newsletters
		FT1-4	Sustainability Manager (10)	>500	23	English	60	Annual Report; Sustainability Report
		FT1-5	Social Impact Manager (15)	>500	16	English	70	Sustainability Report

		FT1-6	Store Manager (5)	>500	27	English	61	Firm's Website
Tier 2	Farmers (FT2)	FT2-1	Farm Owner (10)	5	12	Twi	50	-
		FT2-2	Farm Manager (15)	12	24	English & Twi	45	Sustainability Report
		FT2-3	Farm Owner (10)	3	12	English	55	-
Governmental Bodies	Regulatory Bodies (FR)	FR1	Snr Regulatory Officer (15)	>500	27	English	70	Annual Report; Firm's Website
		FR2	Standards Administrator (5)	>500	23	English	61	Firm's Website
		FR3	District Director (2)	>500	67	English	60	Firm's Website
External Stakeholders for Both Supply Chains								
Traditional Leaders (TL)		TL1	Community chief			Twi	35	Observation notes
		TL2	Opinion Leader			Twi	55	
Local Advocacy Groups/ NGOs (Advoc)		Advoc1	CEO & Founder (Sustainability Group)			English	85	
		Advoc2	Expert (Agroforestry & Regenerative Agriculture)			English	43	
Total duration (minutes)							**1937**	

Table 2 – Summary of sustainability goals

Sustainability Goals		Interviewees	
Sustainability Theme	**First-Order Codes**	**Cocoa Supply Chain**	**Fruit Supply Chain**
Biodiversity conservation	Agroforestry and wildlife conservation *Examples: Distribution of tree seedlings, training farmers in climate-smart agriculture etc.*	PCT1-1, PCT1-2, PCT1-3, LBCT1-1, LBCT2-1, CR2	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Deforestation elimination *Examples: Farm mapping and monitoring forests, ethical sourcing, and third-party certifications etc.*	PCT1-1, PCT1-2, PCT1-3, LBCT1-1, CR2	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Reduced environmental impact *Examples: Carbon footprint reduction through local processing etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4, LBCT1-1, LBCT2-1	FT1-1, FT1-4, FT1-5, FT1-6
	Biodiversity awareness *Examples: Biodiversity training for staff, and farmers, marking biodiversity day etc.*	PCT1-1, PCT1-2, PCT1-3, LBCT1-1	FT1-4, FT1-5, FT1-6
	Boosting yield on existing land *Examples: Providing high-yielding, disease-resistant seedlings, crop revitalisation and rehabilitation etc.*	CR1-1, CR1-2	FT1-4, FT1-5
Sustainable use of resources	Resource efficiency *Examples: Installing renewable energy systems, circular economy practices etc.*	PCT1-1, PCT1-2, PCT1-3	FT1-1, FT1-3, FT1-4, FT1-5, FT1-6
	Reducing food waste *Examples: Diversifying products into new markets, donating products to charity etc.*	CR2	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Overall emissions reduction *Examples: Consolidating products for shipment, route optimisation etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4, LBCT1-1, LBCT2-1, LBCT2-2	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Water conservation *Examples: Harvesting rainwater, using high-pressure washers etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
Empowering farmers & employees	Employee development *Examples: Promoting internal talent, capacity building and on-the-job training etc.*	PCT1-1, PCT1-2, PCT1-3, LBCT1-1, LBCT2-2, LBCT2-3	FT1-4, FT1-5, FT1-6
	Promoting healthcare access *Examples: Covering health insurance costs, mental health and counselling support, etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4, LBCT1-1, LBCT2-1, LBCT2-2, LBCT2-3	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Fair-labour practices *Examples: Fair wages, providing safe and flexible working conditions etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4	FT1-1, FT1-2, FT1-4, FT1-5, FT1-6
	Equitable partnerships with farmers *Examples: Providing agronomy and crop health services, farmer income diversification*	PCT1-1, PCT1-2, PCT1-3, PCT1-4, LBCT1-1, LBCT2-2, CR1, CR2	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Financial inclusion and empowerment *Examples: Women farmers' empowerment, offering flexible financial products to farmers, etc.*	PCT1-1, PCT1-3, PCT1-4, LBCT1-1	-
Community engagement & social wellbeing	Community investment *Examples: Infrastructure development, providing jobs for the youth in the community,*	PCT1-1, PCT1-2, PCT1-3, PCT1-4	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6
	Promoting human right and equal opportunity *Examples: Women's entrepreneurship, setting up community-based protection committees, etc.*	PCT1-1, PCT1-2, PCT1-3, PCT1-4	FT1-1, FT1-2, FT1-3, FT1-4, FT1-5, FT1-6

Table 3 – Sources of Social Agency Problems

Distance Dimension	Key Themes from Data	Emergent Social Agency Problem	Sample Quotes	Agency Relationships
Cultural distance	Embedded indigenous knowledge and farming processes Lack of knowledge on the social norms and customs Prioritize existing informal, social and familial relationships	Hidden logic	"*All the decisions are made somewhere and it's like an order from above that you have to stop all the traditional methods and adopt this new farming practice. Obviously, you'll only do as much as you can but with caution*" (CT3-1). "*The farmers think we only care about our profits and because they are usually from a family line of farmers, they think they know better than our agronomy guys who we send to help boost their productivity.*" (FT1-2)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1→FT2
	Unclear sustainability goals and pathways Certification compliance gaps Vague information on principals' sustainability requirements Uncertain buyer-supplier relationship duration	Hidden expectation	"*We don't know what we are doing, they say use less chemicals in farming, don't expand your farm size, but they also want huge volumes of cocoa beans from us every year*" (CT3-2) "*Farmers are always left wondering what sustainability actually requires of them* […] *they think they are doing the right thing at one moment and they hear about another regulation.*" (FR1)	LBCT1→CT3 LBCT2→CT3 FT1→FT2
Institutional distance	Prevalent informality and opacity of farmers' operations Contract void Weak legal and regulatory enforcement Limited financial literacy or access to credit Limited institutional support and training gaps Time sensitivity of post-harvest requirements (Fruit SC)	Hidden action	"*We support local farmers at the start of the season* […] *provide them with training, working capital and credit facilities, but you don't even know their harvest volumes or even if they are willing to supply you after harvest.*" (LBCT1-1) "*At the end of the day, there is no contract and they* [buyers] *care more about their business than us* [farmers]. *Even when they invest in your farming activities and there is a crop failure, they want to recover as much they invested with no compensation for farmers.*" (FT2-1)	LBCT1→CT3 LBCT2→CT3
	Price & Demand volatility Sustainability impact attribution Limited traceability Fragmented smallholder farmer base Limited buyer oversight over farmers' activities (Cocoa SC)	Hidden information	"*It is difficult to ascertain the full impact on the environment and help improve it because we don't have accurate information from farmers. Until recently, most farm sizes were unknown, the chemicals used, and other vital details seemed irrelevant to the farmers.*" (LBCT1-1). "[…] *you need info such as the chemicals used and the pre-harvesting interval* [the number of days between the application of chemicals and harvest] *to help ensure less risk to environment and health but farmers come back with guesses*" (FT1-3)	LBCT1→CT3 LBCT2→CT3 FT1→FT2

Table 4 – Governance mechanisms adopted in supply chain agency relationships

Aggregated Themes	First-order Codes	Sample Quotes	Agency Relationship
Behaviour-based Mechanisms			
Capacity Building and Training	Providing technical training	"*We launched a labour team initiative in 2021/22 crop season to provide training and technical support for farmers in pre-harvest activities like pruning, weeding, and fertilizer application. The use of these external labour teams was a great opportunity to transfer sustainable practices to farmers.*" (PCT1-3) "*In areas of limited agricultural development, it is our commitment to provide continuous training and support for farmers so that they are able to reach the high ethical, environmental and agricultural standards required to work with us.*" (FT1-5)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1→FT2
	Pilot demonstrations on new practices	"*The Seed Production Unit handles that* […] *they have model nurseries where we germinate improved seeds to be sure it will yield the benefits farmers desire. These vital pieces of evidence are needed to assure farmers that it will work out on their farms.*" (CR2-1) "[…] *we worked closely with farmers to provide continuous training and demonstrations to help existing farmers and new entrants attain the highest ethical and environmental standards required in organic farming*." (FT1-4)	CR2→ LBCT1/LBCT2/CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
Resource and Knowledge Sharing	Providing complementary resources	"*A matching certification standard improves the system* […] *provides measures to ensure all players perform their duties as expected so we can focus on other vital aspects of our operations*" (LBCT1-1) "*To urge farmers towards organic farming, we provide them the necessary inputs such as organic compost to support sustainable agricultural practices*" (FT1-5)	PCT1→ LBCT2 LBCT2→CT3 LBCT1→CT3 FT1-FT2
	Providing customized farm support plans	"*Understanding the specific needs, resources, and land conditions helps in the formulation of individualized farm business plans and sustainability approaches, including a multi-year model of the potential income a specific farm can generate if managed in line with our requirements*"(PCT1-4) "*For our organic farmers in Nsawam, they needed tailored support to migrate from their accustomed sugarloaf pineapple* [a popular variety among local farmers] *cultivation methods, to adopt specific farming needs while ensuring sustainable practices are incorporated in this new method.*" (FT1-5)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3
	Providing crop health and extension services	"*Farmer risks are reduced because high yielding and disease resistant varieties can be monitored, and their preferred conditions better understood before distributing to farmers*" (PCT1-1) "*Our agronomy team visit farms within their zone, and work closely with farmers to identify any pest and disease issues and any potential damages, and train farmers on controlling such situations"* (FR3)	CR2→ CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
External Partnerships and Collaboration	Partnering with NGOs	"[…] *we also work with global bodies such as the World Cocoa Foundation and European Cocoa Association, to achieve systemic change in supply chain practices and extending traceability and supply chain compliance to our sustainability policies*" (PCT1-1) "*We established our foundation to focus on improving community livelihoods*, […] *we cooperate with retailers and NGOs, to fund community-based sustainability projects*" (FT1-3)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1 → FT2 Advoc*

	Government Support	"*COCOBOD provides resistant seedlings, training on good practices, and regularly visit farms to ensure things are done right and LBCs are not exploiting farmers*" (CR1-2) "*We align our works closely with governmental bodies to ensure sustainable economic development in the regions and the government facilitates our activities in Ghana through the tariff-free trading agreement*" (FT1-3)	CR2→PCT1/LBCT1/LBCT2/CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
Outcome-Based Mechanisms			
Transparency and Monitoring	GPS Mapping and Traceability	"*Most farmers have no idea of the actual size of their farms* […] *whereas knowing the size helps us in our yield estimation, it also helps farmers. If a farmer thinks his farm is 10 hectares, when it is only 2 hectares, imagine the cost savings he could make by buying fertilizer and other agro-chemicals for only 2 hectares*" (LBCT2-1) "*We offer free training on traceability in its simplest forms to encourage farmers* […] *to reduce the financial burden involved and bring the best out of them*" (FT1-3)	LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Regular Audits and Compliance Checks	"*We have achieved 100% traceability and child labour monitoring initiatives which facilitates regular audit systems to ensure risks are identified early and remediation initiated.*" (LBCT1-3) "*We take pride in helping farmers respond to threats such as anthracnose, fruit fly and bacterial blackspot* […] *and pioneered a second-party audit scheme which helps farmers identify the root causes of their challenges than merely ensuring compliance."* (FT1-2)	LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Monitoring and Reporting Conditions	"*Our labour teams program currently covers over 4000 hectares of cocoa farmland in Ghana. They provide assistance for farmers with labour-intensive tasks such as pruning, weeding, and pesticide application*" (PCT1-3) "*We tackle modern slavery and other social issues with our monitoring activities. This helps us identify any risks of child labour and underpaid labourers among our suppliers and support farmers to address the root causes identified"* (FT1-4).	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1 → FT2
Financial Incentives	Offering premium prices	"*Cocoa certification schemes were introduced to complement traceability systems that trace certified cocoa to farmers to ensure they earn the premium payment for adhering to ethical labour practices, and environmental standards which improves farmers' livelihoods*" (PCT1-1) "*Farmers who meet the sustainability requirements are paid premium prices for their produce, aligning their goals with ours*" (FT1-2)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Providing soft loans and informal credits	"*Many smallholder farmers look up to LBCs to provide informal credit* [soft loans or subsidies on farm inputs] *to support their activities, hence, the LBCs are more likely to drive value-added services among the farmers*" (CR2-2) "[…] *we help small farmers by providing soft loans and covering certification costs. We deduct in instalments during the harvest season*" (FT1-1)	LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Prompt payment for cocoa purchased	"*Cocoa buying is very competitive; you can't offer better prices due to the regulation but we adopt prompt payment as an incentive to gain access to our desired cocoa volumes and gain farmer loyalty*" (LBCT1-1)	LBCT1→CT3 LBCT2→CT3

		"*No, it's a thing of the past* […] *immediately you carry cocoa to the shed, your wife and children are waiting at home* […] *you can't come back without the payment.*" (CT3-3)	
Operational and Material Support	Sponsoring/subsidizing certification costs	"*A matching certification standard improves the system* […] *provides measures to ensure all players perform their duties as expected so we can focus on other vital aspects of our operations*" (LBCT1-1) "*Where needed, we help farmers by covering the cost of certification* […] *helps us assess our suppliers' performance against global sustainability standards such as GlobalGAP, Fairtrade etc.*" (FT1-1)	LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Pre-financing agent's activities	"*Through COCOBOD, we provide seed fund advances for LBCs to fully carry out their buying activities without financial difficulty*" (CR2-1) "*Our registered farmers benefit from loans, and pre-financing of inputs, helping them to meet certification standards*" (FT1-3)	CR2→ LBCT1/LBCT2 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
	Subsidizing farm inputs	"*We provide third-party labour services, improved planting materials and agrochemicals at reduced costs to farmers. This is needed to improve cocoa farmers' quality yield per hectare and prevent encroachments*" (PCT1-3) "*Our relationship with them is very good, in times of fertilizer application, buying new suckers* [pineapple] *and even tractor ploughing, they are always available to provide it for cheap or even free.*" (FT2-3)	CR2→CT3 LBCT1→CT3 LBCT2→CT3 FT1 → FT2
	Governmental regulatory requirements	"*Farmers adhere to our requirements maybe because it is easy to understand. Government-set standards are also likely to be affordable because they are tailored with the capacity of the local farmers in mind, but they may not be enough for customers from certain countries.*" (CR1-1) "*Government collaborated with NGOs to launch the Ghana Green Label certification that model sustainability requirements that align with local conditions.*" (FT1-1)	CR2→ LBCT1/LBCT2/CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
Culturally-Embedded Mechanisms			
Cultural Integration	Translating the stipulated sustainability requirements	"*You can call it Sankofa* [go back and pick old values], *many sustainability requirements are just our grandfathers' way of life. We used them and still use some of them but most farmers are scared when you mention sustainability. I think the connection will be really helpful.*" (Advoc2) "*We use the community information centre to announce our initiatives and other important public notices in the local language to increase reach and raise awareness*". (LBCT2-1)	CR2→ CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
	Employing purchasing clerks from local communities	"*To succeed in a competitive market, you must cultivate strong relationships with farmers. The rapport and trust are stronger when the farmers know our representatives. They believe these people will not ignore their family ties and deceive them with any wrong concept*" (LBCT2-1) "*He's not a stranger at all, he understands our plight and helps us a lot. Sometimes, they bring their own aboboyaa* [tricycle] *to carry the cocoa beans to the shed. If he was a stranger, who would even trust their cocoa beans with him, not to talk of taking advice on how our farming should be done.*" (CT3-2)	LBCT1→CT3 LBCT2→CT3

	Engaging community traditional leadership	"*We are regularly adding and working with traditional leaders to build trust within communities. This enhances farmer commitment to our sustainable practices*" (PCT1-1) "*The traditional leaders are crucial in developmental project selection and execution, and ensuring sustainability efforts are tailored for their community*" (FT1-4)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1→FT2
Dispute Resolution	Restorative justice	"*Nana* [the chief] *is very committed to helping his people gain any sustainability knowledge and apply them, but what if it fails always comes up* […] *he protects their interests by ensuring what is morally right is also adhered to when solving problems that emerge.*" (TL2) "*It's not always good but even if they* [processors] *fail you, how can you sue them as a single farmer or the others can join but it may cost a lot and takes too long,* […] *sometimes the chief helps us recover some losses from them.*" (FT2-3)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3 FT1→FT2 TL*
Social Engagement	Regular engagement with farmers	"*Most farmers don't keep physical records of their practices, they only narrate as much as they remember. Hence, regular engagement with them helps gather more accurate information on their progress and challenges.*" (PCT1-1) "*We involve farmers and their communities in project selection, aligning their interests with sustainable practices* […] *helps ensure our CSR projects benefits the true stakeholders*"(FT1-4)	CR2→ CT3 LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
	Gifting	"*It is a polite gesture but it also enhances the relationship with the farmers. The farmers in the locality will contributions in cash and kind and as a send-off package for the extension officers.*" (PCT1-2) "*Our agronomists and truck drivers occasionally return with fruits, honey, fowl, eggs* [etc.] *as a thank you from the farmers for the knowledge or information they offered.*" (FT1-1)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3
	Attending social events in local communities	"*Funeral rites for a deceased family member are a big part of our farmers, they'll stop everything else to attend each other's invitation. It is a chance to meet and interact with them socially. You are likely to send a positive message there to other farmers in attendance.*" (LBCT2-2) "*The management team regularly visits local communities and attends social events to strengthen ties and build trust*" (FT1-4)	LBCT1→ CT3 LBCT2 → CT3 FT1 → FT2
	Informal visits	"*Achieving trust with farmers and communities involves frequent visits* […] *face-to-face interaction with the farmers helps clear doubts and improve our relationship, identify their immediate needs to provide tailored training, guidance and support*" (LBCT2-1) "*It is the informal moments that we learn the true problems of farmers* […] *they tell us about their challenges and how that affects home too.*" (FT1-2)	PCT1→LBCT2 LBCT1→CT3 LBCT2→CT3

* *External party involved*

APPENDIX 1

Interview Questions

Firm and Interviewee Background

1. General respondent information (position, years in firm, experience in role, any other related duties)
2. General firm information (name, location(s), size, age, years involved in the supply chain)

Interview Questions for Supply Chain Actors

1. Can you elaborate on any sustainability requirements/goals that you aim to achieve? [why these goals; where do they emerge from?]
2. How do you communicate these sustainability requirements/goals to farmers (suppliers) or other stakeholders?
3. What are the main challenges in working with farmers to adopt your stipulated sustainability practices?
4. How effective do you think monitoring and audits are in ensuring compliance? [discuss any barriers]
5. Have you experienced situations where farmers resisted sustainability initiatives? How did you address these challenges?
6. Are there specific incentives or penalties used to encourage compliance with sustainability practices?
7. How do you resolve disputes or conflicts with farmers or other stakeholders?

Interview Questions for External Actors (e.g., Regulators, Traditional Leaders, NGOs)

1. Can you describe your role and involvement in the cocoa/fruit supply chain?
2. How do you interact with farmers, LBCs, processors or other supply chain actors within your community/district?
3. How do you address any sustainability challenges or disputes that emerge between the players in the cocoa/fruit supply chain?
4. How does your involvement foster trust and collaboration among farmers and other stakeholders?
5. How have local cultural practices or traditions influenced the adoption of sustainability initiatives?
6. How do you work with external organizations (e.g., NGOs, LBCs) to ensure that initiatives are culturally appropriate?
7. How do you see your role evolving as sustainability practices become more formalized in the cocoa supply chain?

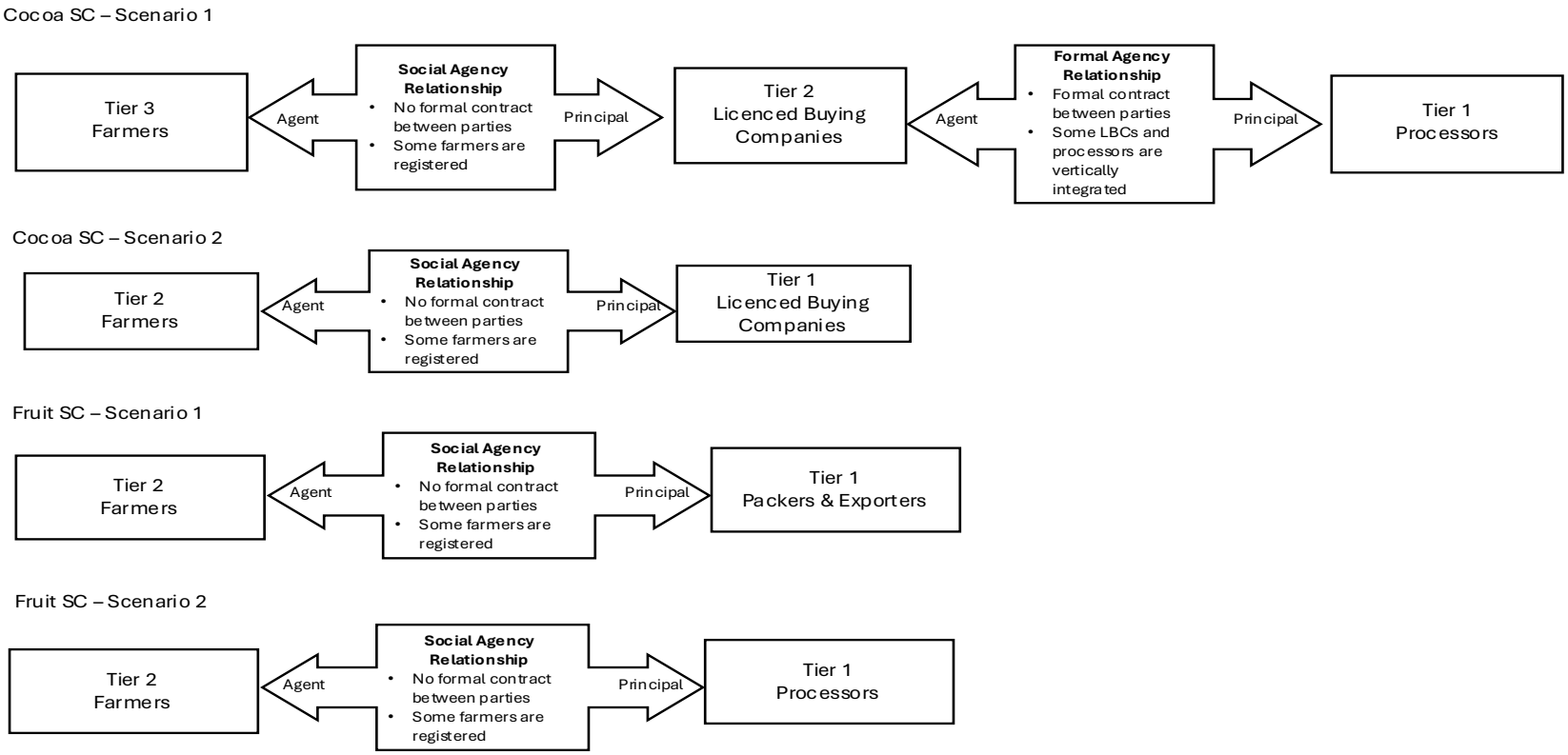

Figure 1: Social Agency Relationships in the Cocoa and Fruit Supply Chains