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Extending Sustainability Objectives Across Supplier Networks: An Exploratory Study of the Agricultural Industry in Uganda

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Abstract

This study aims to develop a better understanding of how organizations within agricultural supply chains extend sustainability objectives across a network of suppliers. There has been extensive focus in the literature on sustainable supplier management practices focusing on first-tier suppliers, but little is known on how firms reach out to sub-suppliers, as one of the main challenges for companies is the identification of its sub-suppliers. This study focuses first on the activities of the focal firm, second on the perception sub-suppliers have of these activities and finally on the role of service providers towards the implementation of sustainable initiatives across suppliers in multiple agricultural supply chains. The findings suggest a lack of integration of sub-suppliers in the supply chain, and sub-suppliers stated a tendency for 'mandated' management practices when sustainability efforts were extended to them. These initiatives are characterized by high participation costs for sub-suppliers and uncertain benefits and resulted in not fully committed sub-suppliers. A shared vision by all parties within the supply chain relationship, is developing collaborative management practices that receives full support from all parties involved. Especially the involvement of service providers within the supply chains exhibit these collaborative practices that amplify the adoption of sustainable practices by sub-suppliers. This study addresses the management of sub-suppliers through a sustainable supply chain perspective and provides insights that enhance the understanding of sub-supplier management practices focused on sustainability initiatives that can serve further research and development of theory. Managerial implications, limitations, and opportunities for further research are detailed.

Introduction

Supply chain management (SCM) has been a key strategic practice for organizations for years, and as a result has received wide scholarly attention. The aim of SCM is not to achieve cost reductions or profit improvement at the expense of their supply chain partners, but rather to make the supply chain as a whole more competitive (Croom, Romano & Giannakis, 2000; Elmuti, 2002). The main focus in SCM is on the dimensions of quality, cost, delivery and technology (Handfield, Sroufe, & Walton, 2005). In more recent years, an increased societal focus on sustainability has gained much organizational interest (Markley & Davis, 2007).

For the purpose of this study, sustainability is defined as 'all activities that are aimed to improve the social and ecological performance of a company, while retaining the financial bottom line' (Carter & Rogers, 2008). Although sustainability is a topic that has received much attention, there is still a lack of research focused on developing and expanding the theory and translating the theoretical concept of sustainability into strategic business practices. Implementation in a practical context still lacks structure and a supply chain perspective (Robert *et al.*, 2002; Baumgartner & Ebner, 2010; Connelly, Ketchen, & Slater, 2011). This lack of structure is often the reason why sustainability implementations result in solutions that do not reach their full potential, and only improve social and ecological performance minimally.

The result of this focus on sustainability has created the need for organizations to switch from traditional supply chain management to sustainable supply chain management (SSCM). The idea of SSCM is that companies explore activities that increase economic performance, while at the same time, staying away from activities that have either low environmental or social performance (Carter & Rogers, 2008). Engaging in SSCM has been identified to lead to competitive advantage,

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while not negatively influencing the traditional dimensions of SCM (Srivastava, 2007; Kumar & Rahman, 2015). However, the adoption of sustainability initiatives in the supply chain is challenging due to the lack of required capabilities for sustainability management (Kudla & Klaas-Wissing., 2012). Overcoming this challenge, and achieving a sustainable supply chain, companies have to develop relationships with their supply chain partners (Cai *et al.*, 2008).

From existing literature on supply chains we know that historically there has been a strong focus on direct 'tier 1' buyer-supplier management to improve sustainability in the supply chain (Gimenez & Tachizawa, 2012). In order to implement sustainability practices within their supply chain, companies need to develop relationship management strategies that influence and support their suppliers (Kumar & Rahman, 2015). Ageron, Gunasekaran and Spalanzani (2012) emphasize the need of strategic partnerships for proper collaboration among supply chain partners that leads to a sustainable supply chain. Pagell and Wu (2009) found that supplier certification and non-traditional supplier development as practices contribute to more sustainable supply chains. Furthermore, the literature shows that strong supplier integration creates competitive supply chains (Clemens & Douglas, 2006); it facilitates the implementation of environmental innovations (Zhu, Sarkis & Lai, 2007) and collaborations with supply chain partners are directly related to the adoption of environmental sustainability practices (Vachon & Mao, 2008; Klassen & Vachon, 2003).

However, there is an area in the relationship with suppliers in the supply chain that the literature has not yet addressed, as scholars fail to understand the necessary activities to engage suppliers *beyond* their direct suppliers in the supply chain (Quarshie, Salmi & Leuschner, 2015). In this paper, all indirect suppliers are defined as sub-suppliers; scholars also refer to these actors as tier-2 or tier-n suppliers. The literature suggests that

supplier surveys, traceability, transparency and the continuity of the chain (Pagell & Wu, 2009), as well as collaboration, dialogue and trust building with suppliers and communities (Hall & Matos, 2010) are important factors in engaging sub-suppliers. However, there has been little empirical evidence to substantiate these theories (Quarshi *et al.*, 2015). Pagell and Shevchenko (2014) confirm this view by recognizing the need that future research needs to capture new stakeholder perspectives and examine potential trade-offs in making sustainable supply chain decisions. Further they propose the view that all economic stakeholders are represented in other areas of research, so that all supply chain impacts are treated as equally important. Among these economic stakeholders are the sub-suppliers in the supply chain.

Research question

In this study, we intend to instigate a theoretical development in the subject of sustainable supply chains by exploring the activities of all actors involved in multiple agricultural supply chains. The agricultural industry is chosen because food companies are prime targets for public concern over perceived supply chain deficiencies related to sustainability and corporate social responsibility (CSR) (Maloni & Brown, 2006). Focusing on this industry in essence allows us to cover the whole supply chain from raw materials to retailers in a 4-tier supply chain. This study investigates extending sustainability objectives across a network of suppliers in order to contribute to the literature of CSR and SSCM. This leads to the following research question: *How do organizations within agricultural supply chains extend sustainability objectives across a network of suppliers?*

Many supply chains, in particular in the agricultural industry, extend to developing countries, where societal and environmental issues are particularly pressing. One of these countries is Uganda, which is characterized by rapid economic and population growth, a high percentage of farmers but also high levels of poverty. Taking Uganda as the focal point of

this study provides us not only with theoretical insights, but also offers practical implications.

Relevance

Results from this study add empirical evidence on how organizations engage multiple suppliers to increase the sustainability of their supply chain. These insights are currently lacking (Quarshie *et al.*, 2015). It will build and enhance the theory of CSR and SSCM, by finding support for management practices focused on first-tier suppliers are also exhibited for sub-suppliers. There is also a practical relevance to the outcomes of this study. Knowledge on how organizations that have sustainability objectives can extend these objectives further than their own suppliers, across the network of suppliers, could result in an increased effectiveness of the supply chain and in a more sustainable and competitive supply chain. Taking in account the whole supplier network would see development of our society that is not just focused on the economic bottom line but also takes into account the social and environmental impacts of our actions.

This thesis is structured as follows: First, we provide an overview of the current state of literature. We address the issue of how sustainability initiatives are implemented from a supply chain perspective and consequently how sub-suppliers are managed. We then describe our research methodology by illustrating the research context, the method for data collection and how the acquired data will be analyzed. Next, the findings of the analysis are presented, supported by relevant quotes from the gathered data. We end with a discussion of this study's outcomes, limitations, conclusions and suggestions for further research.

LITERATURE REVIEW

Sustainability is a concept that has received widespread attention in practice and academic literature for years; however only in the last decades a clear understanding of the concept has emerged (Bansal, 2005; Haugh & Talwar,

2010). An emerging consensus is that there are three dimensions to sustainability; namely, economic, social, and environmental (Rondinelli & Berry, 2000; Bansal, 2005). Where first *economic sustainability* is fundamental to corporate financial success—in the long run the corporation simply can only survive if income exceeds expenditure (Townsend, 2008). Second, *social sustainability* represents the humanitarian context of business and is concerned with issues of poverty and income inequality; education; and broader problems associated with the impact of globalization on economic development (Townsend, 2008). Third, *environmental sustainability* considers the impact of business on the quality and quantity of natural resources, the environment, global warming, ecological concerns, waste management, reductions in energy and resource use among others (Townsend, 2008). By embedding sustainability across business functions, organizations can address some of the negative impacts of globalization and contribute to economic development, poverty alleviation, and environmental protection (Haugh & Talwar, 2010).

The aim of this study is gaining insights on the implementation of the topic of sustainability across a network of organizations that form a supply chain. With the goal of expanding the theory of SSCM in general, and this topic specifically, as there are still gaps that have been identified and are not addressed yet (Seuring & Muller, 2008; Carter & Rogers, 2008).

Sustainability in Supply Chains

There are multiple streams of literature concerned with describing the role of sustainability in SCM. The two major streams within the literature: green SCM (GSCM) and SSCM will be discussed, as they form the main body of research with regard to supplier management in SCM (Seuring & Muller, 2008). Firstly within the context of direct relationships with first-tier suppliers, which are initially reviewed in this section. Secondly, the literature review proposes an overview of the

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current literature that indicates supplier management practices directed towards sub-suppliers beyond the first-tier level.

Green Supply Chain Management

Traditional definitions of SCM have very little to do with what the product is going through after its delivery to customers, as their focus is mostly on production efficiency and coordination benefits (Mentzer *et al.*, 2001). However, during recent years, supply chain managers tend to consider environmental aspects more in their decision making process (Sarkis, Zhu & Lai, 2011). GSCM is not just about considering the environment in the decision making process, but also about productivity and increasing profits (Chouinard & Brown, 2001). GSCM can be defined as 'integrating environmental thinking into supply-chain management' (Srivastava, 2007).

Drawing from its foundation in operations strategy theory by taking a *reverse logistical angle*, GSCM is concerned with the 'upstream' flow of resources - the flow of materials into the organization - in combination with a more efficient use of materials to increase the efficiency of transport (Carter & Ellram, 1998; Srivastava, 2007). Reverse logistics has an important role to play regarding the environmental impact of supply chains, and has received profuse attention from scholars (Chan, Yin & Chan, 2010). In Srivastava's literature review (2007), specific attention is given to the positive outcome of ecological and economic aspects of GSCM. By increasing the resource efficiency, a reduction in operating costs can be realized, and subsequently create a positive environmental impact, which can strengthen the competitive position of the firm. These positive claims have been met with caution by different scholars (e.g. Kersten, Allonas, Brockhaus, & Wagenstetter, 2010; Mollenkopf, Stolze, Tate, & Ueltschy, 2010) who state that, in order to reap benefits from a long lasting competitive advantage for the whole supply chain, the burden and benefits have to be divided fairly among all organizations involved.

Sustainable Supply Chain Management

Seuring and Muller (2008) provide a thorough literature analysis on the SSCM literature. In their article SSCM is defined as "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account, which are derived from customer and stakeholder requirements" (ibid, 2008). In sustainable supply chains, environmental and social criteria need to be fulfilled by the members to remain within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria (ibid, 2008). This definition is rather wide and allows for an integration with green supply chain management as part of the wider field. Carter and Rogers (2008) illustrated the theoretical framework of sustainability as it is applied to the supply chain, as can be seen in figure 1.

SSCM researchers generally agree that organizations can create competitive advantage through sustainability-focused activities (e.g., Bekefi & Epstein, 2008; Flint & Golicic, 2009; Hart & Dowell, 2010). Even though the positive impact of sustainability on the competitive position has received widespread attention for individual companies, current literature lacks insights into how sustainability is implemented, especially with regard to intercompany initiatives (Wolf, 2011). In the following two parts an overview is given of the current state of literature regarding the management of direct relationships with first-tier suppliers and the management of multi-tier suppliers regarding sustainable initiatives.

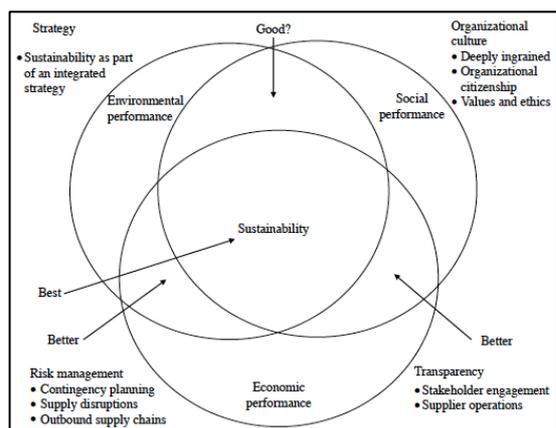


Figure 1. Theoretical framework of sustainable supply chain management (Carter & Rogers, 2008)

Managing first-tier suppliers in complying with sustainable objectives

The literature distinguishes two sets of practices through which organizations with sustainable objectives can ensure compliance of their direct suppliers with these objectives: (1) supplier assessment and (2) supplier collaboration (Klassen & Vachon, 2003; Vachon & Klassen, 2006, 2008). The most commonly used supplier assessment tools are: requesting certifications from suppliers; supplier evaluation and selection in accordance with specific sustainability criteria, and supplier auditing and monitoring (Brammer, Hojmosse & Millington, 2011; Gimenez & Tachizawa, 2012; Jiang, 2009). *Supplier certifications* require suppliers to meet certain minimum standards, which are often verified by third parties (Delmas & Montieel, 2009). Organizations with sustainable objectives use certifications for efficient screening and pre-selection of suppliers. In supplier selection processes, *evaluation of suppliers* according to pre-defined sustainability criteria, enables selection of more “capable” suppliers, which reduces the risk of any non-compliance that might present itself in later stages of the collaboration (Reuter, Foerstl, Hartmann & Blome, 2010). *Supplier audits* is another tool, through which organizations can evaluate suppliers’ sustainability performance against determined CSR standards, to identify the existence of any potential non-compliance (Darnall, Seol & Sarkis, 2009; Teuscher, Grüninger &

Ferdinand, 2006). These audits can be executed by the focal firm, through independent audit firms or by NGOs (Locke, Qin, & Brause, 2007). Supplier monitoring refers to the more informal type of auditing with the goal of continuously observing suppliers’ performance (Brammer *et al.*, 2011).

The second set of practices to get organizations to comply with sustainable objectives is supplier collaboration. Common collaboration practices are supplier development programs where knowledge sharing is central: e.g. training, workshops, or transfer of employees, but it can also include investments. These supplier development programs act as support to the respective supplier in developing its sustainable capabilities (Bai & Sarkis, 2010). As can be noted, assessment practices are more ‘one-way’ focused, by gathering information and evaluating suppliers. Collaboration practices on the other hand consist more out of supplier interactions and propose to enable the dissemination of knowledge and development (Klassen & Vachon, 2003; Vachon & Klassen, 2006).

Managing multi-tier suppliers in complying with sustainable initiatives

Literature has already seen a long tradition on multi-tier supply chain issues, but those considerations are mainly limited to simulations with a focus on production, inventory and logistics (Lee & Whang, 1999; Serman, 1989). More recently, empirical qualitative research addressed multi-tier supply chain issues. It demonstrates especially how power balance, interdependence and relationship stability depend on the structural agreement of the multi-tiered supply chain – a chain consisting of a focal firm, a supplier and their sub-supplier (Mena, Humphries & Choi, 2013; Tachizawa & Wong, 2014).

Regardless of these academic advancements, empirical evidence on the influence of a focal firm’s managerial objectives and actions on sub-suppliers’ behavior or performance remains very limited (Gimenez & Tachizawa,

2012). According to Gonzalez et al. (2008) organizations that adopt certifications for their environmental management systems are more likely to extend sustainability requirements to their suppliers. Certifications make coordination with first-tier supplier easier, as they balance information asymmetries and lower transaction costs. Certifications act as a stimulant for suppliers to adopt socially responsible organizational behavior. This dissemination influences multiple tiers in the supply chain (Ciliberti, Pontrandolfo & Scozzi, 2008).

Because issues surrounding social and environmental sustainability are relatively new and vastly complex, managers often have a difficulty managing beyond their first-tier suppliers. This difficulty is compounded by resource limitations (Welford & Frost, 2006). Practice has shown that if companies engage in sustainability initiatives they tend to concentrate on the closest and best known supply links (Vermeulen & Ras, 2006). Strategies that focal firms can execute is motivating their first-tier suppliers to consider environmental factors in their own SCM, as this can help them manage their sub-suppliers indirectly (Lee & Klassen, 2008). If they refuse to take their responsibility, focal firms can form direct relations with upstream suppliers (Mena *et al.*, 2013) or force their first-tier suppliers to choose sub-suppliers from pre-approved 'vendor lists' (Choi & Linton, 2011). Rather than through forced measure, voluntary sustainability initiatives and strong partnerships with stakeholders from multiple supply chain tiers are presumed to be better suited in enabling closer collaborations and increased engagement with sustainable objectives in the broader supply chain (Peters, Hofstetter & Hoffmann, 2011; Teuscher *et al.*, 2006).

Overall, relatively little research on the extension of sustainability objectives between focal firms and their sub-suppliers has been found. On a practical level, many firms seem to depend on their first-tier suppliers to manage sub-suppliers in the supply chain (Gonzalez *et*

al., 2008; Lee & Klassen, 2008; Spence & Bourlakis, 2009). Managing sub-suppliers seems to be a new management practice for which little knowledge exists from and for both practitioners and academics (Wognum, Fisscher & Weenink, 2002). Therefore, this study aims at increasing our understanding of 'sub-supplier management' in extending sustainable objectives in the supply chain. In the next chapter the methodology for this research will be discussed.

METHODS

This section provides a clarification of the research context, as well as the outline of the research design and the methods used to collect the necessary data in Uganda. Furthermore an explanation is given as to how the obtained data was analyzed.

Research context

As explained in the first chapter, the research focus is placed on one country because it gives the ability to pay thorough attention to country specific characteristics of the implementation of sustainable initiatives in supply chains. Uganda was chosen for several reasons. Firstly, Uganda is 'agricultural-based', that is agriculture is the backbone of the economy with the rural population providing for roughly 70% of the total population (World Bank, 2008). Agriculture is dominated by smallholder farmers who occupy most of the land and produce most of the crop and livestock products. These farmers face key long-standing challenges of low productivity stemming from lack of access to markets, credit and technologies (Salami, Kamara & Brixiova, 2010). Providing insights as to how sustainability initiatives can be best extended to resource-poor farmers can have a great impact to a large part of the population. Secondly, Uganda has an ideal climate for a variety of crops combined with a nutritious soil, which gives it a central place in providing food production in the East African region. This means that any outcome of this research could have a positive impact on the implementation of sustainability initiatives in a very important

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region. Thirdly, there is high level of intercropping farming being done in Uganda, which allows research to be undertaken in multiple agricultural supply chains, to find similarities or differences across several crops. As a result, more generalizable theories can be made about the extension of sustainability initiatives across a network of suppliers in agricultural supply chains.

Research design

From the literature review it can be noted that the theory about the implementation of SSCM is still rather broad and does not go into specifics (Faber, Jorna & Van Engelen, 2005). As a result, implementation of sustainability initiatives are often attempted without structure and end in less than optimal results (Lubin & Etsy, 2010). Taking this into account, this study attempts to clarify, rather than confirm existing ideas, about the implementation of sustainability initiatives in supply chains. Thus, given the complexity of this research field, an inductive qualitative research approach is deemed most appropriate to identify a framework for future research (Vennix, 2012). More specifically, a grounded theory approach is taken, as it is designed to investigate complex phenomena in real-life situations (Charmaz, 2006; Corbin & Strauss, 2008). Since the topic of this study is the theoretical concept of sustainability and its implementation across supply chains, combined with a desire to conduct research of high practical relevance, grounded theory suits the research topic (Glaser, 1999; Mello & Flint, 2009).

The data collection of the research consists of two parts: the first part consists mainly of desk research done in The Netherlands. Findings from the desk research are presented as a literature review in chapter two, resulting in a theoretical framework. This part is characterized by gathering and analyzing secondary data to review the body of international literature and theory on extending sustainable initiatives within supply chains. The desk research is needed to get a deeper understanding of processes related to SSCM.

The second part consisted of identifying the research sample and collecting the primary data by conducting in-depth interviews with the specific actors within the supply chain. This stage of the research was aimed at getting a deeper insight and understanding of how organizations extend and suppliers perceive sustainability initiatives.

The companies that were interviewed represent all of the different roles companies have within the most common agricultural supply chain: production; aggregation; processing and distribution. Additionally, several organizations that acting as support services towards the actors from the agricultural supply chain were interviewed. By selecting this sample, the views of all actors are represented, not only the focal companies that have sustainability initiatives, but also the sub-suppliers receiving the initiatives. Figure 2 (see below) presents the supply chain stages, which is an adapted version of the Food and Agriculture Organization of the United Nations. These terms will be used to clarify the position of a company within the supply chain. As companies from multiple agricultural supply chains were interviewed, the sample reflects different roles and views in the agricultural supply chain.

Data collection and sampling

In a period of three weeks, 17 in-depth semi-structured interviews were carried out with organizations in Uganda. An interview guideline was used to initiate the interviews (Patton, 2002); but thought was taken to always react to emerging themes and topics. The interview guideline can be found in appendix 1 and contains questions about the perception of sustainability and all themes relevant to direct supplier management and thought to be relevant to sub-supplier management. All interviews were carried out in person and lasted between 20 and 90 minutes, with a 45-minute average. Each interview was recorded and then transcribed. The transcriptions were the starting point for the analysis and, as the transcription was

performed, accuracy and correct use of terminology were secured.

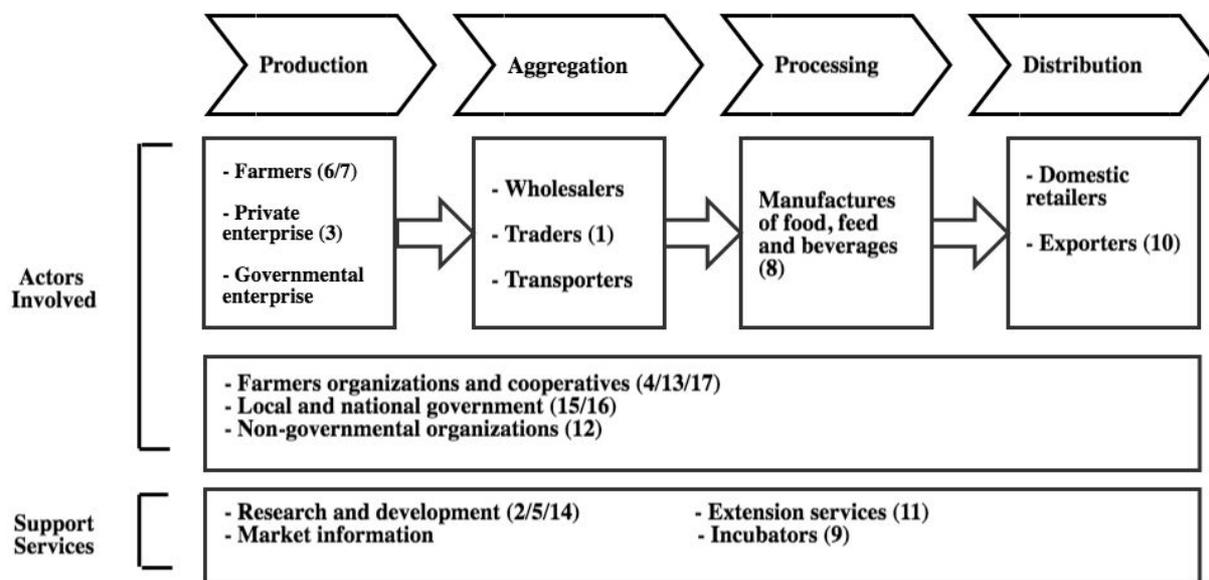


Figure 2. Composition of sample-companies' position in the supply chain (numbers between brackets correspond to respondents from table 1) (FAO-OECD, 2015).

Theoretical sampling (Charmaz, 2006) was used to base the selection of participants to develop emerging theory, as you gather more data that focuses on the category and its properties. The goal of theoretical sampling is not to achieve statistical validity, but to gather rich data (Corbin & Strauss, 1990). Therefore sampling decisions were made by trying to provide a diverse picture of multiple respondents with different perspectives. Thus, the organizations in the research sample represent a cross-section of different agricultural supply chains and supply chain actors (see table 1). Complementing the interview data, secondary information about sustainability activities by the participating companies was collected – where possible. Most of this information came from corporate sustainability reports, internal presentation and data that were made available after interviewing. This data verified the information from the interviews, increasing data objectivity through triangulation (Vennix, 2012; Yin, 2015).

Data analysis

After collecting the data, the data analysis is conducted through multiple coding activities in order to: condense raw textual data; establish clear links between the research objectives and summary findings derived from the raw data, and to develop a framework of the underlying structure of experiences or processes that are evident in the raw data (Thomas, 2006). Coding is conducted in three stages: initial coding, focused coding, and theoretical coding (Charmaz, 2006). Initial coding is performing the analysis very close to the data and without direct consideration of existing theory (Corbin & Strauss, 1990). Initial coding resulted in approximately 350 codes. In the focused coding phase, all codes were reviewed and further generalized (Charmaz, 2006). The most often used codes were reviewed for their fit and renamed where necessary to include higher-level concepts (e.g., when differentiating approaches by companies how sub-supplier were managed to fit into their supply chain, audits and certification approaches were termed with the higher level concept “assessment”). And finally during the theoretical coding, the data fractioned in the initial coding process is reassembled and fostered the deduction of

general themes. In this last phase, the data was restructured to create the proposed typology for the development of SSCM theory.

RESULTS

To ensure alignment of common understanding of the terminology of the study, the concept of sustainability was discussed during each interview. The understanding of the concept in almost all companies resembled the Triple Bottom Line approach, with the exception of both farmers. Although explaining sustainability from an economic, social and environmental perspective also gave them a clear understanding of the concept. Most important - even fundamentally required - for pursuing sustainable initiatives was the positive impact it had to have on the company's economic bottom line:

"...I think that there is a lot of motivation to do that, but it has got to do with financial motivation probably. If you are a resource-poor farmer then the number one motivation is always going to be money." (Interview #11, agribusiness consultant).

This view is in line with the economic impact theory of Carter and Rogers' (2008) SSCM definition, which suggests that the definition used for this study is adequate. Besides a common understanding of the concept of sustainability, all participants stated that following a strategy based on sustainability would increase their competitive advantage, which is why most participants are already engaged in sustainable activities within their organizational context. This is in line with the SSCM literature summarized in the theoretical section of this study. However most participants stated that there is a lack of cooperation between members of the supply chain concerning sustainable activities. This is in line with the view of Lee and Klassen (2008) that attribute a lack of forming relationships with sub-suppliers to the fact that managing them is beyond their direct control, and prefer to focus on managing their own operations. The participating organizations in this study

showed similarities with this view, showing a mostly internal focus and limited activities aimed at extending sustainable initiatives across a network of suppliers.

When companies did execute activities that extended sustainability initiatives within sub-suppliers in their supply chain, these activities can be distinguished in three emergent concepts: (1) indirect management practices, (2) direct management practices and (3) service provider involvement. The first two concepts relate to the theory on managing first-tier suppliers from the theoretical section, and represent respectively supplier assessment and supplier collaboration management practices. The third concept covers all other extension of sustainability initiatives by service providers along the supply chain, not just by the focal firm.

In accordance with these different concepts, intermediate conclusions (ICs) are developed that propose directions for further research. To support the conclusions that emerge around the different concepts, statements from the participants are incorporated into the text. In addition, further proof-quotes for each of the conclusions are provided in table 2.

Indirect management practices

As all supply chain actors are continuously trying to increase transparency in their supply chains, a clear picture of supply chain partners is a key requirement to identify any social or environmental misbehavior in supply chains. When companies then do decide to extend their sustainability objectives across a network of suppliers, they are doing so through either direct or indirect management practices, or a combination of the two. Indirect management practices can be interpreted as 'assessment practices' and are often mandated practices initiated by processors or distributors in the supply chain and consequently extended to their upstream members, in other words from the buying to the selling firm. An explanation of the combination of these practice is given by this participant:

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“We have the farmers training and education; this is number one to build capacity. It helps the farmers to really know the requirements of the certifications that they are going to participate in” (Interview #4, service provider).

Sub-suppliers are managed most commonly in the form of dyads, where sustainable initiatives are only extended to subsequent tiers in the supply chain. Participants stressed the notion that most initiatives are implemented in this way because of the difference in financial strength of the actors across the supply chain. Only the strongest members with the most (financial) power have the ability to initiate these initiatives:

“There are a lot of challenges we cannot address: from input; access to input; access to finance; access to trainings; to technologies and others are very poor for smallholder farmers. (...) We can only get that from private organizations.” (Interview #17, marketing manager).

Based on the participant statements and the analysis of the data, the following intermediate conclusion emerges: *Managing sub-suppliers compliance with sustainable initiatives consists of two dimensions: direct and indirect management practices.*

These indirectly managed sustainability initiatives are usually mandated by the focal company seeking a continuous supply of certified produce. This is implemented on a “this is what you need to do” basis. An example of this practice is adherence to certain codes of conduct or signing a memorandum of understanding (MoU) to establish a business relationship, as the following participant explains:

“Yes, codes of conduct do [influence ethical behavior], (...). So if you don't behave ethically they will talk to you and if you don't change they throw you out.” (Interview #8, soy processor).

When sub-suppliers are managed in this fashion, there isn't much space for an equal dialogue between the two companies, or development practices like knowledge sharing or exchange of best practices. One participant explained the process as follows:

“They [coffee buyers] want specific coffee from that specific area that is produced in a specific way. So any deviation to that may lead to cancellation of the contract, or basically they won't buy it.” (Interview #9, incubator).

As sub-suppliers form business relations with the focal company that extends sustainable objectives, the communication around sustainability in indirectly managed initiatives is often characterized by either strict instructions, made by the focal firm, or almost none at all. This is seemingly very contradictory, as we expect that indirectly managed sustainability initiatives would follow only strict instructions because of the standardized nature of the certifications, but one participant explains the reason for this:

“There is a lot of room for improvement because a lot of our business is informal business. So you find a lot of products and producers that do not follow the formal supply chain and nobody tracks it. Nobody knows what is happening” (Interview #12, NGO).

Based on these findings the second intermediate conclusion is made: *Indirectly managed sustainability initiatives exhibit a lack of collaborative behavior and communication between focal organization and sub-suppliers.*

Besides an apparent lack of communication and collaborative behavior, indirectly managed sustainability initiatives show additional behavior that negatively influences the implementation of sustainable initiatives. When the most dominant players in the supply chain engage in sustainable initiatives, they do this mostly to achieve cost reductions or because they see a marketing opportunity. This goes against the SSCM idea of creating long-term competitive advantage for all the members of the supply chain. Supplier's motivation to

actively engage in sustainable initiatives is to comply with the demand of the market, who want more certified products, instead of improving their own sustainability performance. As a result, most sub-suppliers do not recognize the value of sustainability initiatives, as there is no or limited benefit to implement. This causes a lack of buy-in by the supplying party and results in a failed or partially failed implementation. One of the reasons for this situation stems from the fact that mandated assessment practices are characterized by the disproportionate distribution of benefits, risk and especially investments across all companies that are involved in the initiative:

“The problem we are facing, some of those official trademarks are quite expensive for us. (...) That type of money just to get a certificate sometimes does not make sense.” (Interview #3, coffee retailer).

Although from the data there was no evidence to be found of companies that used their relative power within the supply chain to benefit disproportionately from sustainability initiatives, as suggested in the literature by Kersten *et al.* (2010) among others.

Besides the high participation costs for the suppliers, they also suffer of uncertainty whether these initiatives are beneficial to them. As they have limited financial resources and most farmers are subsistence farmers, they need to be absolutely sure that participating in these initiatives is beneficial to them. Otherwise it can have serious consequences, as one respondent explains:

“But it would be the farmers’ response to be able to have complied to the code of conduct, but at the same time having markets that are good enough to reward their efforts. Because the biggest frustration when it comes to the codes of conduct is that if a farmer complies to one specific ethics, but the neighbor does not, and maybe they sell in the same market for the same prices, it does not motivate the farmer to still comply to the code of conduct and behave

in an ethical way.” (Interview #4, service provider).

Several examples of this sentiment appeared during the interviews, which leads to the third intermediate conclusion: *Indirectly managed sustainability initiatives, characterized by high participation costs and unclear benefits, suffer from a lack of buy-in by the dominated party.*

Direct management practices

Having established two intermediate conclusions that relate to indirect management practices for sustainable initiatives, the focus is now placed on direct management practices. Direct management practices can be interpreted as ‘collaborative practices’ where at least two organizations work together on sustainability initiatives for an extended period to improve their performance on the TBL criteria. From the data analysis multiple examples have surfaced that can be seen as a collaborative practice between the focal company and its sub-suppliers. The most common practice is through direct training in agricultural practices to increase farmer’s yields,

“The farmers that we work with and the farmer organizations we work with have trainings with them. Or, when we support particular farmers in different areas, we try to have those farmers use the best technologies that are available.” (Interview #9, incubator)

Another, less common method, is direct training in agribusiness practices. Agribusiness entails the collective business activities that are performed from farmer to consumer. It covers the supply of agricultural inputs, the production and transformation of agricultural products and their distribution to final consumers (FAO, 2015). Through direct training of agribusiness practices farmers are given the ability to strengthen their position within the supply chain:

“So the farmers are trained in agribusiness practices, that is right from making the holes to

the actual planting and managing the post-harvesting." (Interview #15, production officer).

The crucial aspect in training farmers the agribusiness side of being a farmer is that it gives them much more ownership of their produce and a better bargaining power in the supply chain. As this participant states:

"Creating awareness is one thing, but actualizing the process is what is required the most." (Interview #14, local government).

It is not just about making farmers aware of the possibility of implementing sustainable initiatives, but actually handing them the tools to be able to use them to their benefit on the long term is of much higher value. For these kinds of collaborations to succeed, a relationship must be established with a high level of trust and a long-term perspective. As one rural potato farmer explains what he sees is the best way to collaborate:

"Communication and sharing. We operationalize these value chains through platforms. For every value chain we have a platform. Periodically we convene the different stakeholders along the value chain." (Interview #13, potato farmer).

The main motivation for companies to engage in collaborative sustainability efforts seems to be the opportunity to gain long-term competitive advantages for their whole supply chain. With the expected competitive advantage coming from the ability to continuously grow crops and having a relationship with a company they can continuously sell to. Extant literature (Sharfman, Shaft & Annex, 2009; Seuring, 2011) recognizes the view that a collaborative (direct) approach is more desirable than a mandated (indirect) approach, since they are more likely to produce satisfactory results for all parties involved. Based on these findings, the fourth intermediate conclusion is proposed: *Sustainability initiatives that are managed through direct management practices by focal firms are more likely to receive buy-in from*

sub-suppliers than initiatives that are managed through indirect management practices.

Involvement of service providers

Within Uganda's agricultural supply chains, not only processing or distributing companies are trying to extend sustainability initiatives across a network of suppliers, but a considerable attention to these practices is given by organizations that can be seen as having a support function within the supply chain. The main drivers are farmer cooperatives, NGOs and governmental research and development organizations. Especially the organization of farmers in private cooperatives, to give them ownership of their products throughout the value chain, is a major beneficiary to sustainable competitive advantage. One of the participants explains the mission of these cooperatives as follows:

"We promote what we call a shared value among the different undertakers within the value chain. So getting the added value for the benefit of everybody in the value chain for a sustainable value chain, for a sustainable production, for a sustainable existence of the entire system." (Interview #4, service provider).

What these organizations do is creating an enabling environment for all smallholder farmers where they can freely exchange knowledge on best practices for their respective environment. They way cooperatives manage their network of suppliers is almost exclusively through collaborative direct management practices:

"It is a kind of (...) participatory in a way. Through talking, knowledge sharing, it is the best way to engage people in using the best practices that are available for them, at a local level." (Interview #4, service provider).

These cooperatives bundle knowledge and disseminate it top-down or bottom-up, depending on the situation of each group of farmers. The added benefit of collaborating through an organization is that they create a network of knowledge where farmers teach

their personal network these sustainable, yield-enhancing techniques, to extend the reach of their initiatives:

“We train trainers of trainers. This entails that we select an individual and we train extension workers, but there is a time we go to the groups, and they go back to the community and they train other members of that community in practices and technologies and also provide knowledge regarding climate control and changes.” (Interview #16, national government).

As information about these techniques spread, the regional distances between the organization and the network of sub-suppliers decreases, which has positive effects on the transparency of the supply chain, as has been acknowledged by Sarkis et al. (2011). The involvement of supply chain service providers within this context enables a successful processing of collaborating activities across a network of suppliers, with the aim to create a more sustainable supply chain. Similar observations have been reported in the literature with regard to the involvement of strategic business partner’s direct relationships with suppliers, but not on indirect relationships with sub-suppliers (Pagell & Wu, 2009). Taking the relational view that explains how sub-suppliers, but also focal firms in the supply chain can benefit from competent service providers (Dyer & Singh, 1998) by enabling the actors to explore or exploit partner’s knowledge and resources (Roloff, 2008).

In the research context of this study, service providers have been able to indirectly transfer this positive effect to indirect business relationships with sub-suppliers, through their collaborative activities with focal firm’s sub-suppliers. Which results in the fifth intermediate conclusion: *The presence of additional service providers in the management of sub-suppliers strengthens the effect collaboration on sub-suppliers’ participation of sustainability initiatives*

DISCUSSION AND CONCLUSION

Although the literature acknowledges the importance of including sub-suppliers in initiatives regarding sustainability, quality or operational logistics, a limited amount has actually addressed the management of sub-suppliers (Choi & Wu, 2009; Quarshie *et al.*, 2015). This exploratory study takes a step in describing and understanding this management practice that is becoming increasingly important to business and consumers.

Theoretical implications

The findings of this study contribute to the literature on sustainable supply chain management by providing the insight that focal firms within the supply chain can and do influence the behavior of sub-suppliers through different managerial practices. In the research context – Uganda’s agricultural supply chains – all processing and distributing focal firms managed sub-suppliers to comply with sustainable initiatives. The most poignant difference between managing suppliers and sub-suppliers is the ability to identify sub-suppliers and engage them within their activities. Since most companies buy their supplies through middlemen it makes identification of sourcing markets even more difficult. As focal firms own suppliers are constantly changing, it makes sub-supplier management extremely difficult. A way to combat these ever-changing circumstances according to Choi and Linton (2011) is to identify approved ‘sub-supplier lists’ to first-tier suppliers, or even bypass them and source directly from sub-suppliers, when there is a high risk or dependency on suppliers are deemed too high.

Similar to managing first-tier suppliers, the practices of sub-supplier management can be categorized in direct and indirect management practices of ‘assessment’ (e.g. certifications, on-site visits) and ‘collaboration’ (e.g. training, capacity building) as has been detailed in relation to direct suppliers (Klassen & Vachon, 2003; Vachon & Klassen, 2008). The data

suggest that companies often prefer a mandated approach to managing sustainability initiatives, where they use their supply chain power to force sub-suppliers to comply with certain certification requirements.

However, the biggest influencers within Uganda's agricultural supply chain in managing sustainable initiatives across a network of suppliers, is by involving service providers in the supply chain. This resulted in a higher willingness to adopt agricultural and agribusiness practices. Because focal firms have less knowledge about processes beyond direct suppliers, the involvement of service providers, who have a much better understanding on the local level of these processes and context, might be necessary to a greater extent than in traditional supplier management settings. Through exchange of knowledge, creating awareness about more sustainable processes and inputs, or provision of resources, sub-suppliers are able to achieve better results for their company, which benefits the entire supply chain.

Managerial implications

The data from this study provide several implications relevant for supply chain managers and practitioners involved in extending sustainability initiatives along the supply chain. First of all, within agricultural supply chains most efforts to integrate sub-suppliers should be focused on smallholder farmers. From the study sample it can be concluded that currently SSCM implementation and the supply chain integration of sustainability initiatives is insufficient. To involve farmers and other members of the supply chain with the implementation of sustainability initiatives, more action has to be taken in collaborative activities to increase the quality of products and a strengthening of the supply chain. By focusing on mandated sustainability initiatives with high participation costs and unclear benefits, there is less possibility to generate as much impact as they otherwise could. If the least powerful actors in the supply chain are unable to benefit from sustainability improvements, they have no

incentive to cooperate. The financially stronger members of the supply chain should entertain the idea of helping sub-suppliers with the necessary financial resources to enable them to contribute more. According to recent research by Pagell, Wu & Wasserman (2010), companies are already making sustainable initiatives a core part of their supplier development initiatives and provide the ability for financial investments that suppliers would be unable to do on their own.

The second implication is involving service providers from the supply chain, such as the government, NGO's and cooperatives in sustainability initiatives. This view is shared by Kumar and Rahman (2015) who call for the development of favorable conditions for the adoption of sustainability initiatives. Service providers have greater knowledge of the context of hard-to-reach farmers and the ability to extend knowledge to a larger amount of (potential) sub-suppliers. The key challenge for companies is then to identify and engage sub-suppliers through their direct suppliers since firms typically have little direct power over their sub-suppliers.

Limitations and future research opportunities

By taking a GT approach to analyze the data gathered in this study, rich data has been provided as well as relevant insights to the research question. But there are potential limitations of using theoretical sampling, as there was a limited sample size and a lack of standardized survey questions. As a result, the outcome of the study might not be fully representative of the population. On the other hand, findings from GT research allows the development of research and make suggestion for further work. Further limitations follow from the chosen sample, by focusing on all actors within the supply chain; the aim was to produce a holistic picture of the supply chain. Taking this view diminishes the ability to interview many focal firms that initiate sustainability efforts, which offers avenues for future research. Another opportunity emerges

for researchers to study sustainability in supply chains across different industries. In this study, the analysis did not focus on looking at potential industry differences, instead on activities that accrued over different agricultural supply chains. Further research in this area may prove to be valuable as it is expected that differences between industry sectors exist.

Conclusion

This study has taken a broad look at the management of sustainability initiatives in agricultural supply chains. Based on the findings and the theoretical and managerial implications, SSCM implementation seemingly is at an early development stage. Although companies are aware of the topic of sustainability, they have yet to embrace the idea of fully implementing sustainability into their supply chain relationships. Currently, satisfactory results in terms of the triple bottom line performance in the long term cannot be produced, because of the internal focus of companies with respect to sustainability. When companies do extend sustainability initiatives into the supply chain, they exhibit mandated characteristics with high participation costs and unclear benefits for participants.

The obtained data supports the theoretical view that a more collaborative supply chain implementation approach to sustainability promises improved results on all three bottom lines. Especially service providing organizations within the supply chains have exhibited collaborative practices that correspond with this view. Support for this conclusion can be found by the fact that many of the respondents indicated that sustainability efforts are seen as an important business trend that will continue to gain attention. Which should encourage companies to actively seek out sustainability opportunities and accept the corresponding risks.

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TABLES AND FIGURES

Table 1 - Overview of research sample

No.	Industry	Region	Respondent position (organization)
1	Coffee	Kampala	Trader/middleman (self-employed)
2	Consulting/academics	Kampala	University professor and consultant
3	Coffee	Kampala	Domestic retailer
4	Coffee	Kampala	Entrepreneurship services manager (farmers' association)
5	Multiple crops	East Uganda	Research officer (national research organization)
6	Coffee & banana	East Uganda	Farmer (self-employed)
7	Coffee	East Uganda	Farmer (self-employed)
8	Soy	Kampala	Managing director (soy processing)
9	Multiple agri. SCs	Kampala	Managing director (agribusiness incubator)
10	Multiple agri. SCs (e.g. avocado/banana)	Kampala	CEO (exporter fresh produce)
11	Agribusiness consulting	Kampala	Managing director (consultancy firm)
12	Dairy	Kampala	Senior dairy and livestock advisor (NGO)
13	Potato	East Uganda	(1) Farmer & (2) district production & marketing officer (local government)
14	Multiple agri. SCs	East Uganda	Assistant agriculture officer (local government)
15	Coffee	East Uganda	Production officer
16	Multiple	East Uganda	Sustainable land specialist (national government)
17	Multiple	East Uganda	Director (marketing center)

Table 2 - Quotes for intermediate conclusions

Additional support for intermediate conclusion 1	<p>"The quality is controlled by each company that has different rules as to how to control the quality." (Interview #1, coffee trader)</p> <p>"We have periodic meetings where stakeholders in the value chain convene and look at the performance of the value chain from the beginning up to the end." (Interview #13, potato farmer)</p> <p>"We are in touch with certifying companies which have given us training, they have started working together with us" (Interview #8, soy processor)</p>
Additional support for intermediate conclusion 2	<p>"They send in their experts from their offices to see through all the standards." (Interview #3, coffee retailer)</p> <p>"There is an idea by the actors, that there is quality and that they are enforcing quality... But because there is nobody to track at some places it is hard to say if this is actually done" (Interview #12, NGO consultant)</p>
Additional support for intermediate conclusion 3	<p>"It depends on the preference of the farmers (...). But sometimes the starting requirements of the certification is slightly high." (Interview #4, service provider)</p> <p>"[On pressuring adoption of certification] If you want to say you have organically certified coffee or you want to sell that coffee in Europe, you must have that kind of certification." (Interview #3, coffee retailer)</p>
Additional support for intermediate conclusion 4	<p>"That's what we are planning (...) as a company put more sources in training and trying to look for partners, (...), so that the farmers can access funds to produce more." (Interview #10, exporter)</p> <p>"We have also trained the farmers, which we then call business managers, at each of the associations or cooperatives. They take care of all the other farmers we cannot reach." (Interview #4, service provider)</p>

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Additional support for intermediate conclusion 5	<p>“So this is the system of how these particular farmers are engaged and empowered in the value chain. Largely, with this kind of organization we get them linked to different partners and also engaged like with the government. First of all to create an enabling environment for the smallholder farmers.” (Interview #4, service provider)</p> <p>“With the farmer-ownership model we have a stringent farmer organization, having the commodity which is coffee, add value to it, and get it to the high-end market. But really contributing to the improvement of the life of the farmer, and (...) to societal transformation.” (Interview #4, service provider)</p> <p>“Something that we have done, together with other partners, is to link them with actual input dealers who we believe keep ethics and standards.” (Interview 5, research officer)</p> <p>“The challenge is how to add value. We have spoken to people who use the farmer-ownership model. It is done in coffee but the model can be quite the same for other value chains.” (Interview #10, potato farmer)</p> <p>“And then because of the farmer to farmer and the community, and now we are bringing the extension for sustainability.” (Interview #16, national government)</p>
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Appendix 1 – Interview guideline

Introductory questions

Q1 – For which organization do you work? And what does this organization do? How many people work here, and what is the organizational structure?

Q2 – What is your role/function in this organization?

Questions related to the sustainability

Q1 – Are you aware of the concept of sustainability?

- If YES, can you tell me something about that. Do you or your organization actively engage in sustainability activities?
- If NO, (after interviewer explains what they are) Do you or your organization participate in activities that would fit with concept?

Questions related to sustainable supply chain management (SSCM)

Q1 – Can you describe your relationship with your suppliers?

Q2 - How do you define sustainable SC?

Q3 - What is currently prohibiting you from reaching this goal, so what are the key problems why several crop SCs are not as sustainable as they should?

Q4 – Questions about the role/influence/presence of the following topics/characteristics of supplier engagement:

- Supplier surveys → Tools used by companies to collect information from current and/or prospective suppliers to gauge whether or not they satisfy specific social and environmental criteria that are meaningful to that company.
- Traceability → For the agro-based food chain: “the information necessary to describe the production history of a food crop, and any subsequent transformations or processes that the crop might be subject to on its journey from the grower to the consumer’s plate” by Wilson and Clarke (1998).
- Transparency → Closely linked to traceability, it is extent to which information about the companies, suppliers and sourcing locations is readily available to end-users and other companies in the supply chain.
- Continuity of the chain → supply chain resilience in case of unexpected environmental, financial or social events that could disrupt the supply chain.
- Collaboration
- Dialogue and trust-building with suppliers and communities