

Sustainable multi-tier supply chain management

Case from Finnish food industry

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Saila Nurkka
Aalto University School of Business
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Author Saila Nurkka

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Thesis advisor(s) Anne Quarshie, Olli-Pekka Kauppila

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Abstract

This master's thesis investigates sustainable supply chain management with a multi-tier focus. Sustainable supply chain management (SSCM) covers three aspects of responsibility in a company and its operations, being environmental, social and economic responsibility.

Recently, SSCM has been a popular research topic, although the focus has largely been on the first tier of suppliers, being the direct suppliers of the buyer company. Sustainability demands towards companies are growing which drives companies to manage the sustainability of their supply chain also further upstream than only their first suppliers. Therefore, this research has a multi-tier focus on sustainable supply chain management. The framework that is extended in this research is based on two studies, one is categorising the approaches companies take in implementing sustainability into their supply chain, and the other is analysing the different structures of supply chains.

This research is a qualitative case study with case companies from the Finnish food industry. The multi-tier perspective is also visible in the choosing of the case companies as they are one retailer and two of its suppliers, being from two different tiers within the same supply chain. The primary data forms of 10 semi-structured interviews performed in the case companies for the purposes of this study during the year 2016. The secondary data is mainly publicly available archival material.

The findings of this research link the sustainability implementation approaches used to the type of supply chain structures. The mandated approach for supplier management appears more common than the collaborative, supporting the suggestion of previous research. Also it seems to be most commonly implemented through giving the own first tier suppliers a mediating role. The major contribution to research is made by extending the theoretical framework used and suggesting an additional third approach for sustainability implementation. Furthermore, the findings underline strategic prioritization, as in supply chain, when moving towards further than first tier suppliers, the amount of suppliers quickly grows large.

In addition, this master's thesis contributes to research by providing a profound case study example on this still quite little researched topic. In the near future, companies are expected to increasingly manage the sustainability in their multi-tier supply chain, in which, the findings of this research give welcomed advice and examples for business leaders.

Keywords Sustainable supply chain management, multi-tier supply chain, CSR in supply chain, socially responsible purchasing, environmental performance in supply chain

Tekijä Saila Nurkka

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Tämä maisterivaiheen lopputyö tutkii toimitusketjun vastuullisuuden johtamista keskittyen moniportaiseen toimitusketjuun. Toimitusketjun vastuullisuuden johtaminen kattaa yrityksessä ja sen toiminnoissa vastuullisuuden kolme osa-aluetta, jotka ovat ympäristö, sosiaalinen vastuu ja taloudellinen vastuu.

Viime aikoina toimitusketjun vastuullisuuden johtaminen on ollut suosittu tutkimusaihe. Tutkimus on pitkälti keskittynyt yrityksen ensimmäiseen toimittajaportaaseen, mikä tarkoittaa yrityksen suoria toimittajia. Vastuullisuuteen liittyvät vaatimukset yrityksistä kohtaan ovat kasvussa, mikä ajaa yrityksiä johtamaan toimitusketjunsä vastuullisuutta ulottuen omia suoria toimittajia pidemmälle toimitusketjussa kohti raaka-aineiden tuottajia. Näin ollen tämä tutkimus painottuu moniportaisuuden kysymyksiin toimitusketjun vastuullisuuden johtamisessa. Työssä käytettävä viitekehys pohjautuu kahteen tutkimukseen, joista toinen ryhmittelee yritysten toimintatapoja toimitusketjunsä vastuullisuuden johtamisessa, ja toinen tutkii toimitusketjujen erilaisia rakenteita.

Tämä on kvalitatiivinen tapaustutkimus, jossa esimerkkiyritykset ovat suomalaisen ruokateollisuuden alalta. Moniportaisuus on huomioitu myös valittaessa esimerkkiyrityksiä, jotka ovat jälleenmyyjä ja sen kaksi tavarantoimittajaa, sillä ne ovat näin ollen kahdelta eri tasolta samasta toimitusketjusta. Tutkimuksen ensisijaisena lähteenä on vuonna 2016 esimerkkiyrityksissä toteutetut 10 puoli-strukturoitua haastattelua. Toissijaisena lähteenä on julkisia arkistomateriaaleja.

Tutkimuksen tulokset yhdistävät vastuullisuuden johtamisen käytännöt käytettyihin toimitusketjun rakennetyyppeihin. Valtuutukseen pohjautuva toimittajien johtaminen on yleisempää kuin yhteistyöhön pohjaava, mikä tukee aiempien tutkimusten löydöksiä. Valtuutukseen pohjautuvaa johtamista toteutetaan useimmiten omien suorien toimittajien ollessa välikäsinä. Tärkein tieteellinen kontribuutio on kuitenkin tutkimuksen viitekehyksen kahden vastuullisuuden johtamistavan lisäksi ehdotettu kolmas lähestymistapa. Lisäksi tutkimuksen tuloksissa painottuu priorisoinnin tärkeys, sillä toimittajien määrä kasvaa nopeasti käsiteltäessä toimitusketjussa kauempia kuin ensimmäisen portaan toimittajia

Lisäksi tämä maisterin lopputyö antaa kontribuutionsa tutkimukseen tarjoamalla perusteellisen tapaustutkimusesimerkin tästä vielä suhteellisen vähän tutkitusta aiheesta. Lähitulevaisuudessa yritysten oletetaan enenevässä määrin kantavan vastuuta moniportaisesta toimitusketjustaan, mihin tämän tutkimuksen tulokset antavat tervetullutta tietoa ja esimerkkejä yritysjohtajille.

Avainsanat vastuullisuuden johtaminen, toimitusketjun hallinta, moniportainen toimitusketju, vastuullinen hankinta, yrityksen yhteiskuntavastuu

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1. Introduction

The statement, *companies are responsible for their actions* might seem quite simple at first glance. Especially, in the eyes of the general public, companies are held responsible for their actions – and also the consequences of their direct actions. This influencing power of a company extends far beyond their own borders, which quickly removes the simplicity of the above statement in practice. To take responsibility of a company's purchasing actions and their consequences, many companies are expanding their sustainability management initiative to cover also the supply chain of the company.

In the globalized world, large companies can have an influence on other companies located radically far away – for example in the clothing industry, an owner of a major multinational brand, can be the sole purchaser of a small cotton farmer somewhere on the other side of the world, although being in connection through many middle man. Especially, when the chain of these intermediaries grows long, so does the difficulty of the brand owner to take responsibility of the actions in the chain. How can a global clothing brand then make a promise to its demanding customers that also the cotton farmers at the other end of the long supply chain are acting as environmentally friendly as wanted by the big brand and its customers? In other words, how a company can implement sustainability criteria to its supply chain and make sure that they would be fulfilled throughout the supply chain, no matter how many different companies it includes? Therefore, for large companies today, a structured sustainable supply chain management process is absolutely necessary when trying to impact the social or environmental issues in their deep supply chain.

Both among business practitioners and researchers, it has been noted that sustainable supply chain management (SSCM) has increased its importance in companies together with the rising demand for sustainability. Research results show that companies are expected to increasingly pay interest on their supply chain, and not only to their direct suppliers, but also to parties beyond their direct reach (Choi & Linton, 2011; Grimm et al., 2014; Pagell et al., 2010). The supply chains have grown large due to globalization and outsourcing (Mena et al., 2013). Currently, the number of companies who possess the knowledge of sustainability issues from their whole supply chain is small (Brockhaus et al., 2013), which makes this

research topic especially relevant as the majority of companies will soon be faced with the need of responding to growing sustainability demands of their stakeholders. The implementation of sustainability initiatives within the first tiers of suppliers is already quite widely researched, (Carter, 2000; Carter & Rogers, 2008; Ciliberti et al., 2011) highlighting now the importance of implementation within the further tiers (Tachizawa & Wong, 2014; Wilhelm et al., 2016). What is especially lacking in current research is how the sustainability implementation differs from strategies and actions within the first and further tiers of suppliers. Therefore, this master's thesis aims to fill this research gap, which is to be determined more in detail in the following.

1.1 Research gap

Sustainable supply chain management has lately received large research interest within different fields. This research area has developed during the last decades and can be approached from many different perspectives. Some studies of sustainability implementation in supply chains are focusing on the environmental issues (Handfield et al., 2005; Kumar et al., 2012) whereas others have a wider perspective for sustainability covering also social responsibility (Carter & Rogers, 2008; Pagell & Wu, 2009). A major categorization has been made by the motivations of the implementation whether basing on demand by a more powerful party in the supply chain or driven in collaboration (Brockhaus et al., 2013). The success in implementation is said to derive from common goals and aligned initiatives within different tiers (Narayanan & Raman, 2004) or from inclusion of the middle management in the implementation (Handfield et al., 2005). The complexity of the network and industry is also taken into consideration (Choi & Hong, 2002; Choi & Linton, 2011). What is especially said to be lacking research, is analysing the implementation within multiple companies in a supply chain (Brockhaus et al., 2013).

Largely recognised remains the need for further research within multi-tier supply chains (MSC) (Mena et al., 2013; Choi & Wu, 2009a; Wilhelm et al., 2016). Research on multi-tier supply chain management is even stated to be in its infancy (Mena et al., 2013). Within this

multi-tier SSCM research, there are anyhow still further possibilities to narrow down the research, for example Wilhelm et al. (2016) urged for more research on the different roles of the supply chain members in the implementation process. Although the role of the first tier supplier is recognised as rather critical in the implementation of sustainable supply chain initiatives throughout the supply chain, so far the academia has not paid sufficiently interest on the topic (Wilhelm et al., 2016). The interest of the first tier suppliers to implement the sustainability management issues like communicating, training and monitoring the further tier suppliers, should be investigated more (Wilhelm et al., 2016). Additionally, the role of the NGOs in the supply chains and the possibilities for cooperation within the supply chain partners is still lacking larger research (Wilhelm et al., 2016). Also Forsman-Hugg et al. (2013) are demanding for more research on cooperation in implementing initiatives, this time relating to the food chain's sustainability. The cooperation aspect is relevant, as the supply chain management also means the management of buyer-supplier relationship, and especially when more than two parties will be involved, it is necessary to start discussing cooperation practices in a larger setting.

In addition to answering to the specific research gap, this study answers to the need of combining the discussion of two different fields that are having two different aspects from where to look at sustainable supply chain management (Quarshie et al., 2016). Tate et al. (2010) also add that many companies do not use special concepts or terms when referring to sustainable supply chain management. If concepts or specific words are used, they often are not similar to those of the academic world (Tate et al., 2010). More research could help in narrowing the gap both among different groups of research and between academia and business. Furthermore, the need for additional research is especially true with case studies, as more data from the actions of companies is needed to test the theories in practice and to understand the industrial and regional differences in practise. The context is recognised as especially important when analysing the implementation of sustainable procurement (Tala, 2011). The research on different case companies with their supply chains, and in different industries and contexts is largely asked for (Schneider & Wallenburg, 2012).

As a summary, many studies have been published during recent years around SSCM in general, but still quite few have investigated sustainability management in multi-tier supply chains in particular. The topic has a large potential and is evolving fast both in research and companies' actions, and therefore it would be highly necessary to have more case studies of it. It is important to know that how does the management of the first and second tier suppliers differ to better optimize the management methods. Furthermore, it should be investigated that how do the different supply chain structures influence the methods of managing the second-tier suppliers. These topics are at the centre of the research gap that this research is answering to.

1.2 Research motivation and research question

The object of this study is to participate in the research discussion by aiming to fill the research gap as discussed above. The main motivation originates from the general topic of sustainable supply chain management which is within my major interests as a researcher. From this still quite a large field of research, I gradually moved forward to first analysing the research on influencing the first tier of suppliers. From there, I found the gap for the research on SSCM beyond the first tier of supplier, as it is having a larger gap in research which makes my participation on the research discussions more necessary and welcomed.

Therefore, in this master's thesis, the possibilities of a buyer company to influence the sustainability of its upstream supply chain are being investigated. In the special focus, is to find out how the sustainability demands move onwards from the customer and how do they impact the sustainability of the supply chain – or do they? A closer look is taken on the approaches the buyer companies have taken in impacting their suppliers on sustainability issues. The aim is to analyse further that the first tier and to investigate the possibilities of a buyer company to influence the first tier suppliers so that they in fact aim also to improve, not only their own actions but also their upstream suppliers, being the second tier suppliers of the focal company.

The research question of this study is: *How can sustainability be managed in multi-tier supply chains?* By addressing this question, my aim is to contribute to research by investigating the different ways companies are currently managing their multi-tier supply chains. I am not aiming to participate in the discussion of whether or not the multi-tier suppliers should be managed but am focusing on *how* it could be done. The sustainable supply chain management is a tremendous challenge for many companies especially when the scope expands to further than only the first tier. Therefore, this case study has a focus on the characteristics of multi-tier supply chain management, and aims to provide valuable new information on how this challenge could be tackled.

1.3 Contributions to research

As described before, the existing literature on SSCM has a research gap relating to differences in sustainability implementation approaches in multi-tier supply chains. Basing on earlier research, a presumption is made in this study expecting that the sustainability implementation approaches of a company might differ between the first tier supplier in comparison to the second or further tier suppliers. With this master's thesis, I am contributing to research by framing how the approaches of companies in sustainability implementation differ in relation to the management of different tiers of suppliers. The framework of this study is grounded on two existing frameworks of SSCM to be used in the analyses. On one hand, the different approaches for sustainability implementation are analysed as well as how they are currently used. On the other hand, the routes of implementation are investigated, meaning the analyses of the supply chain structure and of who are involved in the sustainability implementation process.

As a major finding of this thesis, I am suggesting a third approach for sustainability implementation into supply chain, in addition to the “mandated” and “collaborative” - categories by Brockhaus et al. (2013). My research shows that cooperation with non-traditional supply chain parties and supply chain external parties, can indirectly enhance the sustainability in the supply chain, hence forming a third categorization of “indirect” sustainability implementation in the supply chain.

As another major contribution for research, is that the findings of this study are presenting what kinds of SSCM approaches are used for different tiers of suppliers. The findings indicate that the further the supply chain partner is located in the chain; the more collaborative methods of sustainability implementation are used. This research provides important information from the ways of multi-tier supply chain management research. To my knowledge, it is among the only published researches made on the topic in the field in Finland. Even more rare makes the setting of it, comprising of two-tier analyses within the same supply chain. The findings of this research help in generating new theory and practices for multi-tier sustainable supply chain management and serve as a thorough case example. In the following chapters, the research process delivering these contributions is presented. But before engaging more with the research questions, the key concepts of this research are defined.

1.1 Definition of key concepts used in this research

The topic of sustainable supply chain management is being approached by many different angles in research, and although closely related they often still use widely different terminology. Hence, already in this introduction, the most important terms will be defined while in the literature review, a more thorough examination is provided.

The term sustainability is often linked to sustainable development in general. The modern vision of sustainable development has its roots in the Brundtland Report –paper from 1987. The derived definition is widely used and focuses on fulfilling the needs of today without risking the ability of the future generations to meet their needs.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (WCED, 1987, Chapter 2:IV.)

For supply chain, a commonly cited definition is given by Mentzer et al. (2002, 2):

“A supply chain is defined as a set of three or more companies directly linked by one or more of the upstream and downstream flow of products services, finances, and information from a source to a customer. “

Continuing from here, the supply chain management is defined Mentzer et al. (2002, 2) in the following way:

“Supply chain management is the systemic, strategic coordination of the traditional business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.”

To continue towards *sustainable* supply chain management, I have chosen to rely on Carter and Rogers (2002), who, as a conclusion for their literature review on sustainability and supply chain management, have defined sustainable supply chain management (SSCM) as:

“the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains. “(Carter & Rogers, 2008, 368)

In addition to these terms defined in the research, here some more common words are clarified as well. These topic specific words are not scientifically complex; hence they are gone through only briefly:

- Supplier: A company selling products, services, parts of products or raw materials to another company, being hence the buyer company.

- Tiers of supplier: The amount of the links of downstream or upstream supplier that exists in a supply chain.
- Upstream: The direction of the flow of material, information etc. in the supply chain towards the raw materials.
- Downstream: As above, but the direction is to the other point of the supply chain, being towards the final users or consumers of the product.
- Food supply chain: In the food industry the term often used is only food chain, sometimes also food value chain. Nevertheless, the idea stays the same of tracking the ingredients of a ready food product back to the raw material producers.

Many other concepts are also relating to this research and they will be analysed in the next chapter together with the presentation of relevant research. After this literature review, follows the methods chapter (3) with information about conducting the research, collecting the data and the ways of analysing it. Next will be the findings chapters, starting with an introductory analysis to the underlying concepts in the case companies and proceeding from there to the core of the findings of this research. Finally, in the discussions (chapter 5), I will discuss the meaning of my findings in a larger context and finish the paper with a conclusion chapter (6) including the theoretical and managerial implications as well as suggestions for future research.

2. Literature review

The structure of this literature review is organized in the following way. Firstly, the evolvement of the topic is discussed from different theoretical disciplines to provide a broad theoretical introduction. Secondly, a closer look is taken on the sustainability implementation possibilities into the supply chain following the categorization of Brockhaus et al. (2013). The literature review ends with a synthesis of the most relevant literature and the presentation of the theoretical framework used in conducting this research.

2.1 Theoretical background of sustainable multi-tier supply chain management

Here, the different theoretical discussions relating to sustainable multi-tier supply chain management are presented. The roots of the concept rely in corporate social responsibility, which is briefly presented in the beginning. Secondly, the major topic itself, being the sustainable supply chain management (SSCM) is approached. After this, the special themes of multi-tier supply chain (MSC) management and responsibility in food industry are also discussed.

2.1.1 Roots in corporate social responsibility research

Sustainable supply chain management is often seen to be part of a corporate's general responsibility. This is for example clearly seen in the company reports as the annual corporate responsibility reports often have a part of supply chain management included. Also due to this link, I will first in this literature review be taking a closer look at the different aspects of corporate social responsibility and then continue with analysing sustainable supply chain management more in detail.

The corporate social responsibility is a wide umbrella concept, commonly referred to as CSR or corporate responsibility (CR). Other closely related concepts are for example the corporate citizenship, corporate social performance (CSP), responsible business, green business, business supporting sustainable development, sustainability... The history of CSR dates back to the 1950's with the work of Bowen (1953) on social responsibility but has had many forms ever since. The most often used definition for CSR, is that of by the Commission of the European Communities in 2001 (Carbone et al., 2012) - and therefore it is also among the most accepted ones. At shortest, it defines CSR to be "the responsibility of enterprises for their impacts on society" (The Commission of the European Communities, 2001). In more detail, the paper summarises that:

"Most definitions of corporate social responsibility describe it as a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. Being socially responsible means not only fulfilling legal expectations, but also going beyond compliance and investing "more" into human capital, the environment and the relations with stakeholders." (The Commission of the European Communities, 2001, 6).

The key words of "social and environmental concerns" are central to many definitions of CSR, and in this report they will be discussed together with the context of sustainable supply chain management further on. As additional notions from the definition provided above, I would like to highlight the need for "*interaction with their stakeholders*" and the notion that CSR is something having "*a voluntary basis*" and "*going beyond compliance*". (The Commission of the European Communities, 2001, 6). These themes, are further analysed in the following.

The rising interest of companies towards CSR is often said to derive from the rising demands of the stakeholders (Brown et al., 2006; Sarkis, 1998). To tell their different stakeholders about the responsibility of the companies, many companies publish annually a Corporate Responsibility Report or similar, most commonly following GRI initiative (Jose & Lee, 2007). In their new GRI G4-reports, companies are suggested to determine their

stakeholders (GRI, 2013). Typical groups in stakeholder listings are for example customers, consumers of end products, employees, shareholders, owners, investors, suppliers, NGOs, governments and regulatory bodies. The different stakeholders have a different impact on the company and its CSR for example the impact of consumer's demand is quite direct. According to a research by the Nielsen Company (2011), it is very common that consumers are expecting companies to act more sustainably – as 83% of consumers expected improving environmental friendliness. In contrast, only a small part of consumers was actually willing to pay a premium for it as only 22% were ready to pay for the increased environmental responsibility in their purchases (Nielsen, 2011). It could be argued that CSR is reaching a state where it is expected as a “must do” from companies. This reflects upon to the larger discussion where it is questioned, if CSR can be said to be voluntary any more as the stakeholders at large are demanding it. For example, the legislation literature at a larger scale is discussing this (Mähönen & Villa, 2015, 350-352).

Especially relevant stakeholder in this context is clearly then the government and other regulatory bodies. The stricter regulations and new environmental laws determined by the governments are an obvious factor increasing the interest of the companies for CSR (Tate et al., 2010). Recently, EU (2014) has made it compulsory for large companies to report on their non-financial information. The regulation differs largely within countries but also industries. If looking back at the definition of CSR given above by the Commission of the European Communities (2001), the voluntary aspect was quite clearly stated. Many have even criticized the whole definition as stressing too much on the voluntary aspect of CSR (Mares, 2010). The critics seem relevant today as regulatory influence is growing but it can still be expected that the CSR work of companies would be continuing, in particular in the companies where it has proved profitable. The profitability -discussion is briefly explored in the following.

Another relevant discussion related to corporate social responsibility in general, comes from not paying enough attention in the economic aspect. Friedmann (1970) has been within the firsts starting the conversation of responsibility activities being an extra cost and not

profitable as such. Many scholars have criticized CSR for long about whether or not it is worth the investment, with evidence to both directions. The profitability claim is supported largely especially in the literature mainly referenced in this research.

A further claim is stating CSR to be one of the key criteria of a successful company in the future, (Kumar et al., 2012) although a relevant question is why only in the future and not already now. Responsible actions do not relate only to achieving cost reductions thanks to reduced amounts of waste but, in fact, CSR can be a real source of competitive advantage for companies (Kumar et al., 2012; Brockhaus et al. 2013). Also in relation to philanthropic actions, where the link for profitability is more easily at risk. It is stated, that in the form of donations of cash, products or employee's working hours, corporate philanthropy can be profitable also for companies when taking the perspective of improving the operating environment of the company (Epstein, 2008, 97-98). Nevertheless, it seems that still the term CSR is often associated with purely philanthropic actions with a meaning that they would not be profitable as such.

To distinguish the philanthropic and the profitable CSR actions from each other, the term sustainability has increased both in the use of academia and business practitioners. Carter and Rogers (2008) stated that companies have quickly adapted the term sustainability in use, when for example looking by the words used in their annual reporting. Another popular concept answering to the economical critics related to CSR is that of Elkington's Triple bottom line (TBL), forming of the dimensions of company's environmental, social and economic performance (Elkington, 1999). It is widely used and accepted among business practitioner and academia and especially recognised to deliver true long term sustainability (Wu & Pagell, 2011). Interestingly, the concept is used among both the researchers with origin in the business ethics and the supply chain management (Quarshie et al., 2016). This was found out by Quarshie et al. (2016) stating that the sustainable supply chain management research is currently divided into two different disciplines, firstly the ones coming from the business ethics, management sciences and corporate social responsibility backgrounds and secondly to the ones with a foot deep in the logistics and supply chain management discussions. Interestingly, both of the groups are often using the Elkington's Triple Bottom Line theory as a background in their sustainable supply chain management research (Quarshie et al., 2016).

Although the TBL- approach seems sufficient to many, an additional remark is made by Akhavan and Beckmann (2016) choosing in their framework on sustainable sourcing to prefer using ESG-framework instead of the TBL-framework. Reasoning for this is that the economic profitability is already a must for companies as well as NGOs and therefore it is no use stressing that anymore. The ESG letters stand for environmental, social and governance aspects and it is a term often used in the banking industry for ESG-analyses behind investments instead of for example CSR analyses. (Akhavan & Beckmann, 2016). Still Akhavan & Beckmann (2016) are settling for the word sustainability, which stands also behind my decision to use the concept of sustainability as the grounds in my research.

2.1.2 Sustainable supply chain management literature

As reasoned above with CSR and sustainability, also SSCM has many concepts really closely related such as sustainable procurement (Crespin-Mazet & Dontenwill, 2012), sustainable sourcing (Schneider & Wallenburg, 2012) and sustainable sourcing and supply management (Akhavan & Beckmann, 2016). Although some might be stressing the *social* responsibility, they often still do take into consideration the overall sustainability of the supply chain. This is the case for example with purchasing social responsibility (Blome & Paulraj, 2013; Carter & Jennings, 2002). Some, on the other hand are more focused on the environmental issues and it might even be, that the social aspects are not in these cases even considered in the supply chain management. Actually, environmental supply chain management research has originally been the dominating one as compared to socially responsible supply chain management (Seuring et al., 2008). Environmentally focused concepts are for example green supply chain management (Kumar et al., 2012). Not always, there exists a clearly stated concept either, but the work might just simply be called for example analysing the environmental practices of the suppliers (Tate et al., 2011), or the sustainability of the supply chain (Mena et al., 2013) or the integration of environmental management and supply chain strategies (Handfield et al., 2005).

Nevertheless, the many different concept and names, the idea still stays more or less the same. For some companies, the environmental issues are more important and for some

the social issues, as these are highly depending on the industry and the general operating environment (Wilhelm et al., 2016). Implementing certain criteria, chasing common objectives and monitoring performance dominate among the common aspects. Therefore, in this study the different concepts and terms will be used as synonyms for the term selected to use, being the sustainable supply chain management (SSCM). As the roots of sustainability were explained above to be deriving from the CSR discussion, now a quick look is taken on the supply chain management side more in detail.

If looking back 100 years from now, the discussion nor research about supply chains and their management did not exist as companies such as Ford Motor Company produced its own materials covering then the whole supply chain (Gelderman 1989, as cited in Mena et al., 2013). The need has only risen when the cost structure of companies has changed so that buying is more effective than own producing. To guarantee the wished aspects, the supply chain needs to be managed. Describing of the current importance of supply chains is a statement by Ketchen and Hult (2007) saying that competition has changed from “firm vs firm” setting to a “supply chain vs supply chain” setting. This combined with the notion that increased globalization and trend for outsourcing has cause the supply chains to have grown increasingly complex (Mena et al., 2013), could be assumed to mean that the management of them is also more complex but not at all less important.

Recently, as showed in the previous chapter of CSR, partly due to external pressures, sustainability has made its way among the expected aspects from companies (Grimm et al., 2014). Handfield et al. (2005) highlighted the importance of environmentally responsible supply chain by stating that a company is only as sustainable as its suppliers and its whole upstream supply chain. Therefore, it is important to manage the sustainability of the supply chain in order to truly be a responsible company. Luckily, Carter and Rogers (2008, 361) found out that “supply chain professionals are in an outstanding position to impact sustainability practices.” They mention some of the many examples from the work of the supply chain professionals which impact the whole sustainability of the company, like packaging of products, working conditions in own warehouses, transportation efficiency as well as impacting suppliers to implement environmentally and socially responsible practices

like management systems (Carter & Rogers, 2008). Here, the listed actions are improving the overall sustainability of the company, and while doing that also decreasing costs (Carter & Rogers, 2008) which is an example of the environmental profitability demand highlighted in the sustainability framework by Carter and Rogers (2008) and presented below in figure 1. Their framework is also answering to the need for combining the research disciplines of social and environmental supply chain responsibility management which was the notion by Carter and Jennings (2002) saying that previously the environmental or social issues in the supply chain management had been researched in a “standalone fashion” without links to each other.

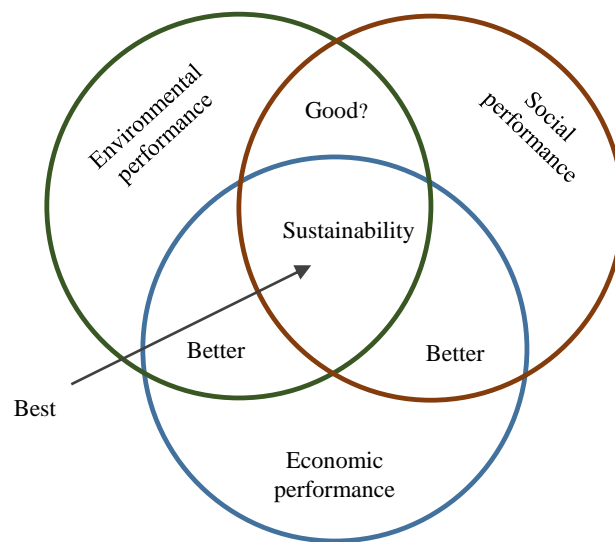


Figure 1: SSCM framework adapted from Carter and Rogers (2008)

In their suggested framework (Carter & Rogers, 2008, 365) presented the triple bottom line idea of Elkington (1999) as circles that cross each other. As seen above, it reflects the definition of sustainability as a combination of meeting all the three goals, one of them being the profitability in the form of economic performance, others being environmental and social performance. The learning here is that the sustainability is the only truly wise option – as the combination of any two of the dimensions are even at best only “better” options. The combination not including the economic aspect is even criticised whether to be beneficial at all with the “Good?”-text. Therefore, true sustainability remains the best option, when all of the three criteria are met for responsible environmental, social and economic performance. (Carter & Rogers, 2008).

According to their research on literature, Carter and Rogers (2008) also define “supporting facets of sustainability”, which are risk management, transparency, strategy and culture. Although here listed as separate ones, they are actually inter-linked as certain activities might go under multiple categories of facets (Carter & Rogers, 2008). Such an example was given for example by stakeholder engagement, although listed by under transparency in the framework, actually it might have an influence also on the risk management (Carter & Rogers, 2008). These supporting facets and their impact to the importance of SSCM are gone through in the following:

Under transparency as a supporting facet, Carter and Rogers (2008) also listed here the stakeholder engagement and the supplier operations. From these, the link to CSR is strongly seen in the stakeholder engagement being among the listed aspects in the definition by CSR (The Commission of the European Communities, 2001). The role of transparency is also inevitable, and comes into question for example when companies are making sustainability related flattering statements and promises on their internet pages or in sustainability reports, stating how sustainably the products are manufactured and how responsible the company is. The problem arises with the statement that “a company is only as responsible as its upstream supply chain” (Handfield et al., 2005). If the company is not focusing on the management of its upstream suppliers, the well-meaning statements could easily be blamed to be greenwashing, meaning a concept, where company image aims to be polished with philanthropic actions like planting a tree although the actual business is harmful for the environment. Greenwashing can also be unintentional, which in research has not been such a popular topic recently, but still is estimated to happen in real life happens in the form of responsibility claims covering the whole production (Brockhaus et al., 2013). The companies with supply chains that are transparent enough to make general responsibility promises remain few (Brockhaus et al., 2013).

An additional difficulty for transparency derives from the different use of language. It has been recognised, that companies do not use sustainability related concepts or terms coherently (Tate et al., 2010). Actually, many SSCM processes are such, where some ideas

of sustainability are already integrated to the company's actions – but are not necessarily seen as acts in enhancing sustainability. Only when investigating the company from the sustainability perspective, the actions can actually be recognized as part of sustainable supply chain management (Tate et al., 2010). Although it is good that the responsibility is integrated, still the lack of coherent concepts is a challenge as the discussions among different parties is harder if there is no consensus on the meaning of the terms. In addition, the external reporting about sustainability achievements risks to be absent leaving the benefits for example for brand reputation unreached.

Moving on to the other supporting facets of sustainability, Carter and Rogers (2008) also defined the integration of sustainability issues into the strategy as well as the aligned organizational culture as another supporting facet. There are results on a supporting relationship between SSCM activities and positive organizational culture (Carter & Jennings, 2004). Integration into companywide strategy is central as otherwise the sustainability strategy risks in being an additional and not necessary implemented efficiently. It is also acknowledged that the sustainability issues can enhance firm's supply chain performance when properly integrated (Handfield et al., 2005). The different integrating possibilities are analysed further on in this literature review in the section for implementing sustainability.

As the final supporting facet of sustainability, Carter and Rogers (2008) recognised risk management. Risk management is an important aspect in SSCM, as not ensuring the sustainability of supply chain can have serious negative effects especially for the brand owner company (Wilhelm et al., 2016; Handfield et al., 2005). Mitigating the risks in the supply chain should even be extended beyond the first tier of suppliers. In the eyes of many shareholders, it makes no difference that in which tier of a supply chain a sustainability violation for example related to environmental or social issues is in. As long as it can be said that the breakage has been in a supply chain of a certain company it can be enough to cause a major reputational crises or even law suits (Clark, 2015). It has been researched that the

sub-suppliers are more probably the ones causing the major environmental and social breaches, and not the direct-suppliers of the company (Plambeck, 2012). Therefore, in their sustainable supply chain management practices, the companies should aim for a multi-tier perspective and guaranteeing the responsibility also further than the first tier of suppliers, going all the way to covering the whole supply chain up to the raw material producers. How is multi-tier supply chain management then possible, as already the first tier supplier management seems difficult? This multi-tier perspective will be further investigated in the next chapter.

2.1.3 Multi-tier perspective in supply chain management

Multi-tier supply chain (MSC) management is relatively new and demanding context for both the academia and the business. The statement “the study of MSCs is in its infancy” by Mena et al. (2013, 73) is a well describing one. The phenomenon is a complex one, often simplified for research purposes. For example, multi-tier supply “chains” are in reality best characterised as networks of suppliers, including both vertical and horizontal links among different actors (Choi & Hong, 2002) but for research purposes, they are often simplified to links of three vertical companies as for example in the researches of Wilhelm et al. (2016) and Mena et al. (2013).

A common way for simplifying has been a *dyadic structure*. Nevertheless, now a contradiction relating to it has been widely acknowledged. Multi-tier supply chain management research has grown, as according to Mena et al. (2013) there is a contradiction in the research of supply chain as the supply chains have grown more complex and longer, but the research on them is still often focusing on dyadic relationships, meaning for example a direct buyer-supplier relationship, with a focus on only one tier. Therefore, Mena et al. (2013) are contributing to the research with their theory building on triadic approach. The triadic approach, meaning a three-tier system setting is chosen due to simplification purposes, as it is the easiest way to analyse an MSC (Mena et al., 2013).

Also for example Choi and Wu (2009a) recognised the need for more complex research and seeing the dyadic approach as not sufficient enough to examine the complex

networks of supply chains where the actions of one company impacts the other companies in the network. Analysing a triad is suggested as the simplest possible unit of analysing a network as then the impacts between a third party and the relationship of two other parties can be analysed (Choi & Wu, 2009a). Of the triad forms of supply networks researched, the most common structure has been case of a buyer-supplier-supplier relationships, which is especially typical in manufacturing and food industries (Mena et al., 2013). Other types of structures are then more common for example in services based industries such as IT-service providing (Mena et al. 2013).

In addition to analysing a triadic structure, Mena et al. (2013) focussed in their research especially on the routes of implementation. Mena et al. (2013) divided the companies into different categories based on the type of relationship between the different tiers of suppliers. The categories are open, closed and a transitional MSC, the last one being the middle stage of the others.

“The “Open MSC” represents a traditional supply chain where information and product flows are linear and there is no direct connection between the buyer and the supplier’s supplier, giving the supplier in the middle a mediating role.

The “Closed MSC” occurs when the buyer and the supplier’s supplier have established a formal link and are directly connected to each other. This means both firms have regular contact with each other, share information and manage their mutual relationship either formally (i.e., through contracts) or informally through regular interaction. In this case the mediating role of the supplier practically disappears. (Mena et al., (2013, 61-62)

To simplify the above statements by Mena et al. (2013), the buyer can either aim to impact the further tier suppliers directly (closed loop) or indirectly (open loop) through the first tier supplier. In the latter way, also the one far more common, the first tier supplier plays a significant role in the implementation process. Wilhelm et al. (2016) have analysed the role of the first tier supplier as a double agent on one hand fulfilling the demand of the buyer and on the other hand managing its own sustainable supply chain initiatives. Therefore, in a

multi-tier supply chain management, the first tier supplier is often said to have a mitigating role. The first tier supplier is in a critical role in either implementing to further tiers the buyer's sustainability initiatives or not (Grimm et al., 2014; Wilhelm et al., 2016). The first tier supplier can be seen as an agent that can make important decisions impacting the sustainability of the network or supply chain at large for example in relation to supplier selection or processes used or not used (Wilhelm et al., 2016).

Another way of speaking about the mitigating role is that relating to the agent theory. This relates to why the agency theory has often been chosen to use in the analyses of SSCM (Wilhelm et al., 2016). Although the company forms of individuals that have to be convinced to employ the company practices, it is still the company in the middle of a MSC deciding the either mitigate the demand forward or not in the supply chain. To simplify, the agent theory means that one company, in this case often the buyer company, delegates tasks to another company, in this case the supplier, who becomes in this way the agent working to achieve the tasks given (Eisenhardt, 1988).

Coming back to the conversation about dyadic and triadic studies, Tate et al. (2013) actually suggest that it is not so much of a study of analysing the amounts of tiers of companies, as the companies in the end form of people deciding to execute or not-execute the company policies. Tate et al. (2013) add to the conversation by saying that not even the triadic models of supply chain research are enough because the network is such a complex issue that only truly complex models could give a proper picture of the situation and the relations in the network.

Additionally, it is not only the first tier suppliers that can have an agent role in furthering the sustainable supply chain management initiatives on behalf of the focal company. Especially when the network of supply chain is large, it is not possible for the buyer company to aim to form relationships with all suppliers. The sustainable supply chain management can also be seen to include the managing of untypical supply chain partners. This was visible in the research by Brockhaus et al. (2013) as they chose to interview 3

different tiers of suppliers (supplier, manufacturer and retailer) in their study. In fact, as they had the perspective of covering the whole supply chain, in addition to the “normal” manufacturing suppliers, they also investigated other parties having a role in the supply chain such as logistics providers and consultants. Already from this study it is interesting to see, that the tiers of suppliers or the division of the studies between dyadic or triadic structures is not necessarily that clearly defined and therefore also not the key point in research.

What is it then that impacts whether or not the mitigating role of the suppliers in the many different tiers of supply chain does work? Here aspects such as the mutual trust, relationships, supply chain structure and power division are playing a role. Some issues, like the power division are difficult to influence by the company itself while others are more easily manageable. According to Mena et al. (2013), the division of power in a MNC is determined through both the aim to control and the structure of the supply chain, mostly the position of the company in the supply chain. But companies can also aim to improve their position in the supply chain by for example cooperating with other supply chain members, especially with those tiers further than their direct suppliers or customers. (Mena et al., 2013). Mena et al. (2013) continue that as the responsibility demands grow in the upstream part of the supply chain as the raw materials producers are having a major impact on the sustainability of the final product, then the raw material producers are also getting more power as the power and responsibility go hand in hand.

For successful SSCM, the importance of relational issues should be acknowledged. Strong relationships or partnerships can even be at the core of a company’s sustainable supply chain management strategy (Handfield et al., 2005). High degree of mutual trust and long term orientation are helping companies to achieve good results in implementing sustainability in the supply chain (Brockhaus et al., 2013). It is important to remember that actions of companies have influence on other companies both in individual level and company level, as well as the issues deriving from throughout the supply chain and the general operating environment (Forsman-Hugg et al., 2013).

After this quick glance at the theoretical background for multi-tier supply chain management, it is evident, that major challenges remain for companies aiming to manage their extensive supply chain. Before moving further on looking at the special ways of sustainability implementation into the supply chain, a quick look will be taken on the most important themes of sustainability in the food industry and special aspects of it.

2.1.4 Characteristics of the food industry

The food industry in general has extremely large and global sustainability impact (Grimm et al., 2014). Hence, due to the global warming on one hand, and the rising demand of customers towards healthier and safe food products on the other hand (Forsman-Hugg et al., 2013), the responsibility related to food supply chains is increasingly important as well as challenging, especially for the large buyer companies. Lindgreen et al. (2009b) state that the quality and health effects of food together with animal welfare and environmental issues have become general concerns globally. The challenge is that the issues most related to sustainability of food are determined at the other end of the supply chain than where the consumers are. Although, the food industry has extremely large sustainability impacts throughout the supply chain, it is especially the raw material producers at the beginning of the supply chain, being often small farmers, that have a major role in defining the total sustainability of the end product (Grimm et al., 2014). Additionally, Mena et al. (2013, 72) stated *“In food supply chains, the further upstream an organization is the more impact it is likely to have on sustainability.”*

Food and agribusiness companies are facing fast changes as they are increasingly expected to answer to the growing demands towards sustainability (Forsman-Hugg et al., 2013; Grimm et al., 2014). The pressure is to move from only stating the ideology to showing the responsible acts in real life for example through the traceability of the food chain all the way to the raw materials, the quality and safety of the raw materials and the final product, the societal and environmental aspects of the processes and products including also the animal welfare (Forsman-Hugg et al., 2013). Hence, the sustainability issues are especially in the

food industry a major reason for companies to reach out to manage their supply chain – also further than the first tier. Mena et al. (2013) discovered in all of the three cases of their research, that sustainability is a remarkable reason for buyer companies to form links to their supplier's suppliers. This was exceptional as the supply chain relations in the food industry are mostly dyadic (Mena et al., 2013), but sustainability implementation initiatives were the ones changing the industrial patterns and demanding multi-tier approaches. The multi-tier supply chain management is particularly important for food industry as for the industry it is peculiar that the auditing in many cases has to be done in the raw material producers, meaning directly at the farms to for example know about the labour conditions or pesticides used, but for many other types of industries doing social audits, the tests can be made also in the tier of supplier closer to the final consumers.

On what it comes to special sustainability themes in the food industry, Mena et al. (2013) mentioned some sustainability themes that were in the interest of the buyers when they were reaching out to their supplier's suppliers. These were greenhouse gas emissions, water and land use, environmental impact and animal welfare standards (Mena et al., 2013). Also Grimm et al. (2014) stated that consumers and other stakeholders are more demanding towards companies in sustainable supply chain issues, especially on what it comes to food safety, but also on environmental and social responsibility issues at larger.

As my topic is detailed around the CSR in food chain in Finland, the research by Forsman-Hugg et al. (2013) is showcasing the country specific trends in the topic. In their research, Forsman-Hugg et al. (2013) found out the Finnish food companies are feeling the pressure towards increased sustainability and estimating the actions needed to answer the needs. The pressure is coming from different stakeholder groups including the customer, NGOs, media, governments and the general public (Forsman-Hugg et al., 2013). In their research, Forman-Hugg et al. (2013, 31) discovered the following 7 major focus areas of CSR in the food chain: 1) environmental responsibility; 2) animal health and welfare; 3) occupational welfare; 4) product safety; 5) nutritional responsibility; 6) local well-being and 7) economic responsibility. In addition, the role of transparency and open communication gained large importance throughout the different focus areas.

It is interesting to note that the areas 2-6, where all part of the social responsibility. The importance that it gained, is possibly explained also by the methods of the research, as the data was largely collected in group discussion within different shareholders, and I believe it is the easiest for people to relate to and discuss the problems related to people and not for example the environment that much. Although in the research by Mena et al. (2013) the environmental issues were listed as important ones.

One common finding is that in the food industry, probably one of the most important topics is the food safety. Mena et al. (2013) stated that the demand concerning the safety has increased from both consumers and governments, and that it is especially the basic raw material producers that are the ones to answer this demand. This aspect is also the one most stressed by the regulation, as the agriculture industry in Europe is largely regulated (Wilhelm et al., 2016). For example, the European General Food Law 2002 determines many aspects from food safety to plant and animal welfare (Wilhelm et al., 2016). A major support for this is that every ingredient in a food product has to be traced back to its raw material location (EU, 2002).

After this theoretical summary of the most relevant themes in food industry, as well as previously discussed multi-tier supply chains, sustainable supply chain management and CSR, the theoretical roots of the phenomena called sustainable supply chain management in the food industry are gone through. Therefore, it is now relevant to have a look at what are those supplier's management practices more in detail.

2.2 Implementing sustainability to supply chain

This chapter will focus on what the current literature has to say about sustainability implementation in the supply chain as further in this research I will be focusing on that of the companies' current actions according to this research. First a short introduction is given

to the topic in the form of looking at the internal implementation practices, then moving on to the supplier management practices following a categorization of Brockhaus et al. (2013).

On what it comes to sustainable supply chain management (SSCM) practices more in detail, currently, SSCM management is understood as a broad concept, covering many actions in a company. Seuring et al. (2008) define SSCM to include the coordination of all material and information flow and cooperation between all the different companies within the whole supply chain. In addition, while doing this, the three dimensions of sustainability as well as the stakeholders' opinion should be covered. (Seuring et al., 2008). Then again, Srivastava (2007) is going further into details explaining the different actions in a sustainable supply chain like, including the sustainability already in the product development and manufacturing processes, in the purchasing and choosing of materials and in the delivering of the product and also recycling it after use. The successful implementation of different actions included in the SSCM practices starts from the company internal implementation.

2.2.1 Company internal preparations for sustainability implementation to supply chain

Internal integration can be said to be the starting point for any sustainability management initiative. It is important to first confirm the successful implementation of an internal sustainability program as otherwise it might seem hypocritical to improve supplier's sustainability, if own sustainability has not been guaranteed first. Implementing company internal or external sustainability program can be seen as a change management process that requires careful attention in the own company. There is no one way of implementing sustainability, but different companies can focus on different areas responsibility (Lindgreen et al., 2009a). In the following, some common aspects to be taken into consideration in the internal implementation process are gone through.

As with all major changes in a company, also the implementation of sustainable supply chain management practices should have the support from executive level. Handfield et al. (2005) like many others, stress the importance of executive level commitment for implementation

of environmental supply chain management. Although, often it is the case, that the executive level realizes the importance of environmental performance only after a major threat for company image like an environmental accident (Handfield et al., 2005). For one way or another, the support from the executive level is a must for change to happen. Yet, the change management process should be thoroughly implemented all the way to the operational level meaning that the executive level cannot be the only one driving the change. Handfield et al. (2005) give an example. They found out that often it is the case that supply chain executives or other high level managers are the ones who make the general strategies but the strategies are not integrated to the daily operations without the involvement of the purchasing managers (Handfield et al., 2005). Instead Handfield et al. (2005) suggest that the environmental purchasing practices need to be integrated especially at the operational level, meaning at their case the “*Commodity Strategy Process* –level.”

In addition to having the managers involved from multiple levels, the implementation process should also extend to the systems used in the company. Handfield et al. (2005) suggest taking *a systems approach* and having an environmental management system with a scope taking into consideration also the aspects outside of the company. Their suggested framework integrates many parties in the product design and development processes, like commodity level managers and suppliers (Handfield et al., 2005). The summary is that the general sustainability strategies of companies need to be implemented to the operational level strategies to be able to be thoroughly implemented (Handfield et al., 2005). They should therefore be also integrated to the systems level. For Epstein (2008) the key is in having the sustainability data integrated into the measurement system to be able to use that in the decision making in the company. An initial presumption could be made that larger companies have more probably systematic systems which could be deployed for sustainability implementation too. This is also supported by Wilhelm et al. (2016) stating that larger firms are more probably more formalized and therefore have more thorough processes to be used in the implementation. Although they might have more suppliers which could indicate more challenges in the SSCM nevertheless the supplier management processes are more formalized and sustainability implementation could start from there.

Sustainable supply chain management practices have been categorised in the literature by many different researchers. In this literature review, I have chosen to rely on the framework by Brockhaus et al. (2013). In their framework, they divided the approaches to sustainability implementation in supply chain into two categories of mandated and collaborative implementation. (Brockhaus et al., 2013, 174). Their framework is especially well suited for the bases of this literature review as their categorization does not differentiate actions between the different themes of sustainability being for example the environmental and the social. As in their categorization, also in this literature review I have chosen to analyse these different sustainability themes jointly. This supports the combined discussion including statements of different researchers although they might have originally been focusing only on a certain sustainability themes. At other studies, it is relevant to analyse the themes apart, for example studies on companies working in industries where there are high environmental risks, which would support the focus on environmental sustainability in the research. Nevertheless, here, as the focus is on the management approaches and not the actual performance, the joint analyses suits well the research purposes. Therefore, the categorization of Brockhaus et al. (2013) is used in this research and the division on sustainability implementation approaches to mandated and collaborative, which are presented below.

2.2.2 Mandated approach for sustainability implementation to supply chain

In these categorizations by Brockhaus et al. (2013), the approaches towards SSCM have been divided into two different categories: mandated and collaborative. The specialities of each category are presented in the Table 1 below. First I will present the mandated categorization of Brockhaus et al. (2013) and continue in the next chapter with the collaborative approach for sustainability implementation in the supply chain.

	Mandated	Collaborative
Time horizon:	Short/Medium term, no supplier development	Long term, calling for extended supplier development
Implementation:	Dyadic, formal	Integrated, formal and informal
Split of benefits:	Disproportionately	Proportionately
Initiation:	Pulled by the upstream SC partners (retail)	Engaging SC partners
Communication:	Low level, formal	High level, formal and informal
Internal implementation:	Driven by short term cost reduction or marketing opportunities.	Driven by desire to achieve long term competitive advantage

Table 1: Supply chain approaches towards sustainability, adapted from Brockhaus et al. (2013)

According to Brockhaus et al. (2013), the mandated approach is typically initiated by the buyer companies, or other dominating downstream members of the supply chain. They are demanded from the often weaker upstream supply chain members in a formal way without much room for negotiation. In the buyer-supplier relationship, the demand for increased sustainability is often coming from the dominant company in a “mandated” way, so that no buy-in is looked for (Brockhaus et al., 2013). Typical actions are filling questionnaires or asking signatures for policies and code of conducts of the dominant members in the supply chain. Topics discussed often cover more economic aspect than in depth sustainability discussion, showing that the suppliers are expected to make the improvements quite individually and no teaching or sharing of best practices is involved. In this way the suppliers are also the ones facing more of the costs of the implementation work, while the buyers enjoy the same benefits of improved sustainability for example in marketing but with only a fraction of the costs. In their research, some buyers even demanded the cost saving from, for example saved energy by the supplier, to be passed on to the buyers in prices. (Brockhaus et al., 2013).

A closely linked categorization is given by Akhavan and Beckmann (2016) dividing SSCM practices into *screening* or *development* categories, although environmental and social are categorized as their own within each of these. If comparing their screening category with mandated category by Brockhaus et al. (2013) many connections are found. Common for the screening and mandated approaches are the tools used for management and the way of implementation. On screening, the focus is on assuring the performance of suppliers for example through different selecting methods and reporting systems (Akhavan & Beckmann, 2016). These kind of actions aiming to increased sustainability in supply chain management, are often demanded by the buyer company and in this way then “forced onto the weaker upstream members” (Brockhaus et al., 2013).

Possible activities in this mandated approach would include for example the ones listed by Akhavan and Beckman (2016) under the supplier screening activities. They have grouped the activities into the following categories: 1) definition of minimum requirements and standards, 2) supplier assessment, 3) supplier selection process, 4) supplier monitoring and 5) designing consequences for non-compliance and remediation (Akhavan & Beckmann, 2016, 4). In implementing these actions, sustainability management tools can be used, some of which are mentioned in the survey by FIBS corporate responsibility network in Finland. Using code of conducts seems to be among the most popular tools of large Finnish companies to manage their sustainability work, 67% of responding companies are using a code of conduct (FIBS, 2016). The main benefit with asking signatures to a company code of conduct is to move on the responsibility further away in the supply chain and “secure the company’s own back”. This is especially related to the legislative issues where, if part of a supplying contract then the companies have the power to influence clearly on paper. Code of conducts also help to decrease communicative difficulties and misunderstandings as the criteria is clearly described in a document (Ciliberti et al., 2011) that can even be translated to the relevant languages.

From the FIBS survey (FIBS, 2016), also the use of different certificates and standardised management systems, appear to be very popular, although no specific percentage can be given here. With the certifications, some critics should be raised upon

discussion. It is said, that the especially the ISO14000 certification is more commonly adapted by companies that are already on a fairly good level on their sustainability initiatives and in this way the certifications are not at best in spreading the sustainability initiatives (Brockhaus et al., 2013). It might also be a financial question as applying for certificates can demand large investment that not necessarily all of the smaller suppliers can afford. If used as criteria for supplier approval, the need for acquiring of necessary certificates prior to selection might leave out some of the smallest suppliers.

A clear example on the definition of minimum requirements on sustainability is noted in the practices of purchasing managers. It is noticed that to focus on the *cost, quality, delivery and technology* are not enough anymore, as now the environmental and even social aspect are getting to be included *into* the criteria itself. Although, it depends on the context of the company that in how dominating a role they are as part of the criteria. In many cases the sustainability issues of certain level are prerequisites for supplier selection but for some they might play a smaller role. For example, Handfield et al. (2005, 8) describe this well by stating that for many of the example firms in their research: *“the supplier’s environmental performance can be an order winner, while cost and quality are typically order qualifiers.”* Nevertheless, to a large amount of companies, fulfilling certain sustainability criteria is a mandatory step, as part of supplier selection, forming an important part of their risk management practices.

Although in this literature review, the social and environmental responsibility are discussed jointly, some major differences are presented here. Environmental performance criteria have been said to be more easily audited and also therefore measured and managed than social criteria (Wilhelm et al., 2016). It also often is more comparable, has a more general impact and is less industry dependent than social criteria (Wilhelm et al., 2016). Wilhelm et al. (2016) give the example of carbon footprints that are already very easily comparable and the emissions have a global impact (Wilhelm et al., 2016). In the food industry, for example the amount of used water, pesticides etc. is quite clear to measure and manage (Wilhelm et al.,

2016). Also indicators related to electricity, waste, emissions etc. are usually quite easily possible to be estimated from for example billing according to usage – often electricity is charged by the amount used or waste costs are paid by the tons dumped to landfill, so the data needed for monitoring performance is easily available and benefits of decreasing the environmental impact are clear.

On the other hand, social responsibility is often harder to measure and audit, than environmental. In many cases, the social performance is relational and context dependent which means that measuring the performance is not as straight forward as with environmental issues. For example, as Wilhelm et al. (2016) mentioned that the cases of sexual harassment are impossible to be properly estimated or followed to see improvement.

Despite the downsides of the mandated approach, it is now fairly common that companies have adopted the management of suppliers in this mandated way. This is especially well seen as in their research, Brockhaus et al. (2013) did not find any company at all that would be implementing the supply chain practices in an all collaborative way but all were using mandated way although more collaboration was wished for: “... *there was a consensus among all interviewees that collaborating around sustainability would be beneficial as opposed to more mandated forms of implementation*”(Brockhaus et al. 2013, 177), meaning that the supply chains are not managed as cooperatively as would be useful. Therefore, the collaborative approach was created and will be presented in the following.

2.2.3 Collaborative approach for sustainability implementation to supply chain

Brockhaus et al. (2013) described collaborative approach for sustainability implementation to be, in many ways quite the opposite from the mandated implementation style. As showed previously in Table 1, the collaborative implementation characteristically has a long time horizon allowing time for iterative development. There is more communication, and also informal communication plays a major role. The implementation is integrated and engages different supply chain partners in comparison to being driven by the downstream companies

only. (Brockhaus et al., 2013, 176-177). What is interesting in this way of sustainability implementation is that it *represents the “ideal vision” for sustainability implementation in the supply chain* for the participants in the study of Brockhaus et al. (2013, 176).

Cooperation within the supply chain companies in sustainability initiatives is widely asked for in the recent literature (Seuring et al., 2008; Hopkins, 2009; Pagell et al., 2010). It is also recognised that the buyers who had adapted sustainable sourcing initiatives were looking for more collaboration also with suppliers located further than first tier (Pagell et al., 2010). It is suggested, (for example by Quarshie et al., 2015) that companies would move from the compliance based SSCM strategies towards one using more *positive incentives*. This way, the upstream supply chain companies would start incorporating more responsible practices from their own will and in the end also more sustainable SCM principles.

Managing positive common goals is also what Narayanan and Raman (2004) suggest through aligning incentives in the supply chain to reach good performance in the supply chain. They state that the supply chain does not work well if only guided by market forces and driving individual company's needs, but instead the different incentives in a supply chain should be aligned to succeed (Narayanan & Raman, 2004). When thinking about this on a sustainability perspective, the sustainability should be made an incentive for all the actors in the supply chain if true sustainability is wanted to reach.

Additionally, a positive relation between common goals and relationships was found out by Mena et al. (2013). Their research suggests that when the relationships in a supply chain were closer and the different actors of the supply chain acknowledged the interdependency of the relationships in the supply chain, then common objectives were more likely chased with the basis of trust and cooperation than basing on power – which is a more typical way especially in the mandated way of supplier management. **Good relationship** between the supplier and the buyer with a high degree of trust is especially important in the collaborative way of sustainability implementation (Brockhaus et al., 2013). The structure of the supply chain internal relationships and power divisions are important influencers in this.

As noted above with the chapter of mandated approach, also in this category of collaborative approach for sustainability implementation in the supply chain by Brockhaus et al. (2013) it has many similarities to the supplier development categorization of Akhavan & Beckmann (2016). They list these practices to be typical in this group: *training and education, collaboration and joint development* and *supplier incentives*. In addition to these, the practices related to supplier development on environmental issues included sharing knowledge and investing resources or capabilities for supplier. Additional aspects in the social side of development practices also comprised of following up practices related to supplier diversity initiatives. (Akhavan & Beckmann, 2016).

2.3 Literature synthesis and theoretical framework

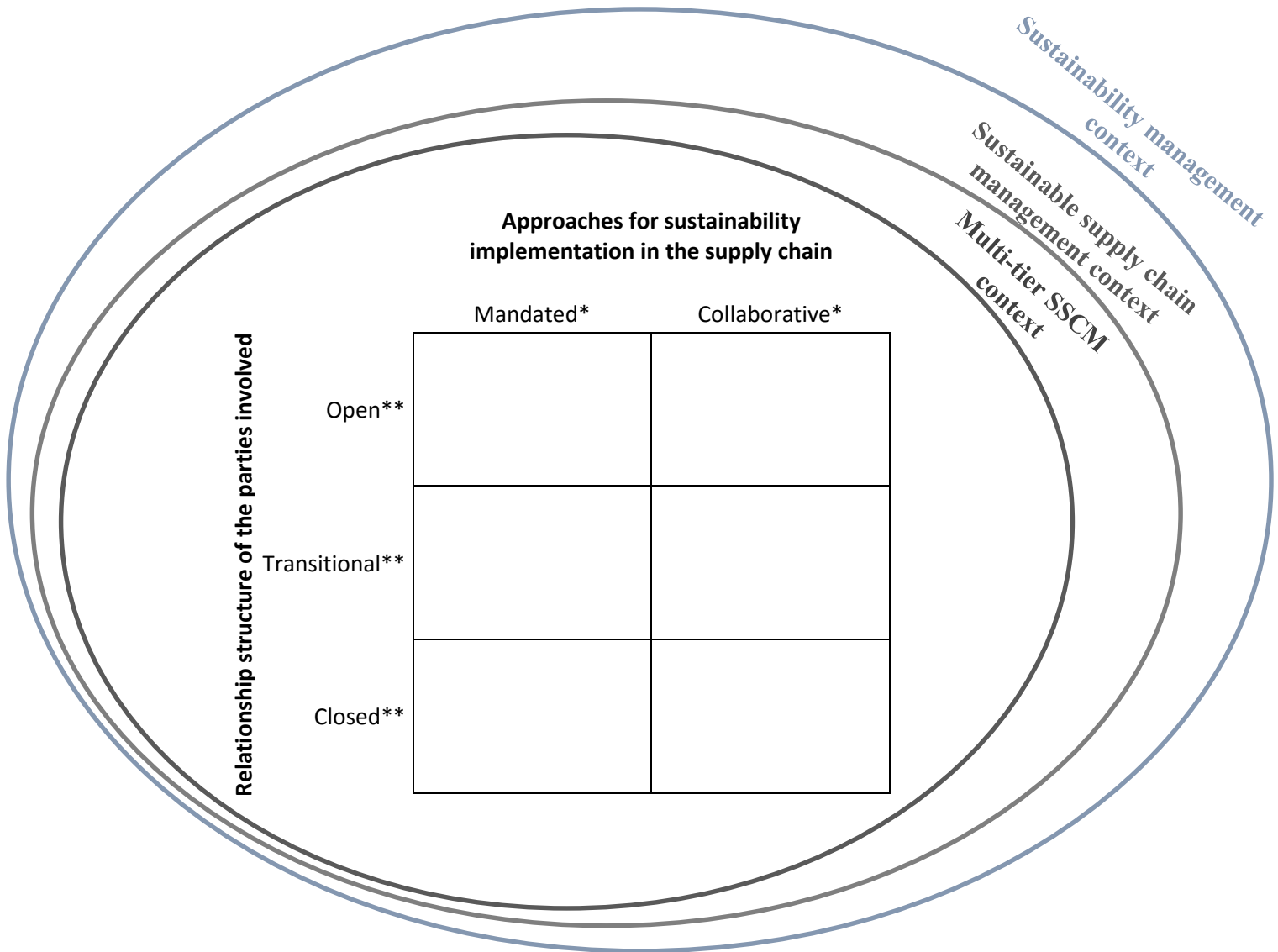
As shown through this review of literature, sustainable supply chain management is a topic that can be approached from many different angles. Although, quite a lot of research has already been done, there still remains many themes that could be further researched. One of these, is the multi-tier perspective within the sustainable supply chain management.

From the literature, it can be proposed that the multi-tier supply chain management begins with a thorough focus on company internal implementation. The sustainability strategy is a necessary base for defining company's processes and actions for supplier management. The management of the first tier of suppliers is the starting point, from where a company can have two routes to go further, either through the first tier by allocating the first tier of suppliers a mediating role or then contacting the second tier of supplier directly with or without the help of the first tier. Two major possibilities are determined: the mandated and the collaborative approaches for supplier management, out of which the mandated is far more common although the implementation of the initiatives in a collaborative way is shown to deliver better results (Brockhaus et al., 2013).

Theoretical framework of this study is in line with the summary of existing research. Firstly, the framework highlights the company internal implementation in the form of underlying contexts, which are presented as surrounding circles in the figure 2 below. The sustainable multi-tier supply chain management is presented as one area of sustainable supply chain management, which again is part of the more general sustainability management context. Inside the surrounding context circles is the centre of this study's framework. This matrix is following the work by Brockhaus et al. (2013) in dividing SSCM approaches into two categories of mandated and collaborative ones. This categorisation is especially well suited as the base of my framework, as it clearly defines the approaches of companies in implementing their sustainable supply chain management initiatives into two different categories both relating to my research question of how sustainable multi-tier supply chain can be managed. I will use this framework of Brockhaus et al. (2013) in the analyses forming the horizontal axes of my theoretical framework as showed in the figure 2 below.

What remains absent from the framework by Brockhaus et al. (2013) is the multi-tier perspective. This is why I have continued the framework with the idea of Mena et al. (2013) to analyse whether the suppliers are approached directly or indirectly by the buyer company. These form the vertical axes of my framework as showed below in the figure 2. The "open" multi-tier supply chain represent an indirect approach where the first tier supplier is allocated a mediating role in furthering the SSCM implementation (Mena et al., 2013). On the other hand, the "closed" loop stands for direct interaction between the buyer and the second tier supplier, whereas the "transitional" represents something in between these two categorizations (Mena et al., 2013).

This framework seeks to cover the research gap of the difference of SSCM practices between the first and the second tiers of suppliers, as described in the literature review. In the findings section, the results of this study will be discussed to show how the research gap was filled. But first, a closer look will be taken on how this research was conducted, in the following methods chapter.



* adapted from Brockhaus et al. (2013)

** adapted from Mena et al. (2013)

Figure 2: Theoretical framework used in this study

3. Methods

This section describes the research methods used in this study. First the chosen research methodology is described (a qualitative case study), then the sampling of the industry and case companies. These will be followed by more detailed information about the interviews conducted. I will finish the methods chapter by describing the data analysis procedures used for the data collected.

3.1 Qualitative case study as the research methodology

This research is a qualitative case study investigating the supply chain management practices in Finland. Case studies in general are a form of research used for complex and contemporary phenomena and they are especially suitable for research answering to “how” and “why” - type of questions (Yin, 2003, 1). Yin (2003, 3) divided the case studies to exploratory, explanatory and descriptive ones. The research questions help in telling which strategy to choose. This research represents an explanatory one with the data analysis aiming to build an explanation to the complex social phenomena (Yin, 2009). Case study method fits well in investigating this kind of complex social phenomena and situations where the researcher does not have major possibilities in controlling the events (Yin, 2003, 1-2).

Typically, case studies use a large variety of sources as evidence (Yin, 2003). Case studies are often performed with mainly qualitative data but quantitative data can be used as well (Eriksson & Kovalainen 2008, chapter 9). This is often driven by the lack of data available on the topic to perform a quantitative analyses or the complexity of the issue (Eriksson & Kovalainen, 2008, chapter 9). Hence, qualitative case study is especially a good method for research on social phenomena that have not been widely researched yet and when the study is explorative by nature (Gerring, 2004). The sustainable multi-tier supply chain management practices respond to this criterion as there still is not that much of research nor data on them. The phenomenon is complex which supports the need for thorough analyses.

Case studies can be categorized by many different criteria, for example by the amount of cases included. With this common way, the division would be to either single or multiple case studies (Eriksson & Kovalainen, 2008, chapter 9). Yin (2003, 40) stresses the type of links between the cases, and continues the division between single and multiple cases with a dimension of how many units of analyses is within a single case or within each of the multiple cases. This means that on one hand, my thesis is a study of a single supply chain, of a retailer company and two of its direct suppliers. But on the other hand, in this same context, it is a study of three individual companies, managing their own sustainability and coordinating their own supplier relationships, each of the companies therefore forming their own unit of analyses. This makes my study to be a single case study with embedded units of analyses. (Yin, 2003, 40). The case companies were analysed both on their own and in the interaction between them.

Eriksson and Kovalainen (2008, chapter 9) further divided case studies into two categories of either intensive or extensive ones. Intensive case studies highlight interpretation of the case by the researcher and thorough understanding of the case and its context from the inside with a focus on each individual. Sampling is often statistical. Whereas the extensive case focuses more on replication and less on individual interviewees. The method is used for example to develop or test theories, while the individual interviewees represent more of instruments in the study towards something greater than as interesting individual cases. In the extensive case studies, sampling is done on the basis that what could most probably serve as interesting cases for the study. Data collection is done repeatedly by replicating the studies with new individuals. (Eriksson & Kovalainen, 2008, chapter 9).

In this research, the intensive approach was dominating although aspects from both of the categories was used partly. The single case study perspective allowed intensive approach, aiming to thoroughly understand the functioning of the supply chain management, the relationships within the companies and the roles of each individuals with adapted questions. Then, on the other hand, the principles of extensive case study were used for example on what it comes to sampling, where the proper person to answer could be indicated from within the company and many of the questions remained the same for each participant where cross-

case comparison was possible. The choosing of the industry and the case companies was an important step, which is next to be presented.

3.2 Selection of industry and companies

In qualitative business research, systematic sampling methods are not required as accessibility and fit for the research are more important factors (Eriksson & Kovalainen, 2008, chapter 5). In this research, the aim was to make an explanatory case study as described above with a focus on thorough understanding of the supply chain management practices in the case companies. It was relevant to choose one industry to be able to better understand the context in it.

3.2.1 Selection of industry

After selecting the general topic of sustainable supply chain management and the qualitative case study as my research methods, the research process continued with searching for suitable industries. Choosing the case companies from the same industry and country minimizes the differences coming from legislation, culture and language. To ease the data collection, Finland was chosen as the operating environment. After considering multiple industries, I chose to focus on the food industry. First of all, this industry is already highly regulated due to food safety issues and for that reason far ahead with sustainability related issues as well. Secondly, but closely in relation to the first reason, the food industry is already very transparent due to for example the consumers will to know where their food is coming from in addition to the regulative must. Third reason relates to the food industry's trend for minor processing and short supply chains. A triad structure in supply chain is typical for many products in the food industry (Mena et al., 2013) meaning that there often is only raw material producer, one supplier level like processor or middleman, and retailer. In manufacturing industries, where products can be made out of components including many different parts, the supply chains may easily grow far larger. As the supply chains are shorter and geographically more close so then one could suppose that the focal company would have

a better impact in them – at least a better knowledge of them, which would ease the data collection. These assumptions and generalizations formed the main reasons for contacting companies operating in the Finnish food industry.

3.2.2 Selection of case companies

In this research, the sample of companies is relatively small, only three case companies, so that I could acquire more thorough knowledge of them. Here, the process behind selecting these three companies is explained. The process started with contacting the retailer company, being in this case the buyer in the supply chain. The Finnish food market is quite small, in fact there are only three major retailers in the market. From these, I chose to contact the one differentiating in my opinion the most with transparent communications and discussing openly their sustainability work, for example the goals. I contacted Kesko Food Ltd, which has been chosen as the most responsible company from the food industry in the world in Global 100 –listing (Kesko, 2016b). Kesko is also such a large operator in Finland that choosing suppliers should be easy as most food companies in Finland are probably supplying Kesko.

As this research is a single case study with multiple units of analyses, I decided to have more than one first tier supplier company to increase the robustness of the research and to be able to compare the findings of SSCM methods used within the different units of analysis (Yin, 2003, 40). In this case, the number of two suppliers proved to be sufficient to conduct the research with the resources available, making it a total of three units of analysis. The criteria I determined for this sampling was done with convenience sampling method (Eriksson & Kovalainen, 2008, chapter 5). It included that the suppliers are large operators in their fields, which could indicate that the relationship is acknowledged in the focal company too. Following the same idea as with the industry selection, I prioritized companies located in the Helsinki area to ease the data collection. A further criterion was companies to be originally Finnish to be sure of the same country requirements. Finally, I also prioritized companies with sustainability information on their internet pages which could indicate that they are active in sustainable supply chain management to find proper material for the

narrow research question. With these criteria, I found two more companies to ask for participation in the research and luckily received the interviewing permissions.

3.3 Data collection

In gathering the empirical data, a typical division between primary and secondary data was made (Eriksson & Kovalainen, 2008). This is especially typical for research on businesses (Eriksson & Kovalainen, 2008) and with case study methods (Eisenhardt & Graebner, 2007). The primary data comprises of interviews performed in 2016 and material received from the interviewees. The secondary data is of written material acquired from the internet pages of the case companies and other public materials.

3.3.1 Data accessibility, trust and ethicality in research

Data accessibility is of most importance in qualitative case studies with research external organizations. Companies work as “gatekeepers” for the data and it is necessary to build trust to gain access to the information (Eriksson & Kovalainen, 2008, chapter 5). When contacting the companies, it was important to keep in mind that the topic is usually approached by a different angle with researcher hoping to reveal “breaches” in the supply chain. The topic had also recently become famous from media scandals, such as that of finding child labour from deep supply chain of Stora Enso (Stora Enso, 2014) and of the collapse of Rana Plaza factory in Bangladesh in 2013 killing more than a thousand workers making clothes for large multinational fashion companies such as H&M (Kasperkevic, 2016). There is not yet that much of transparency in the supply chains that companies would feel at ease discussing the topic. Due to these issues, it was important to build trust with the companies and guarantee the confidentiality and ethicality of the research. This was done in the following ways.

To build trust and ease the access to the data, I started from asking the participation interest within a single company from managerial level after which the other persons within

the company would feel more at ease to participate. Eriksson and Kovalainen (2008, chapter 5) suggested this in the form of forming first relationships with the key people in the organization who have in their power to give or deny access to the data. Following their suggestion, communication with these people was continued also after the interviews to allow any possible wish for further modification of the presentation of results or any limitations on the research material (Eriksson & Kovalainen, 2008, chapter 5).

Attention was paid on the ethical research principles. It is important that all participants were voluntarily involved and knew of their possibility to withdraw from the research at any time (Eriksson & Kovalainen, 2008, chapter 6) in this case also after the interview and before publishing. *Anonymity* was discussed with the participating companies, agreeing that individual interviewees would remain anonymous whereas the participating companies could be recognisable. *Confidentiality* was guaranteed for each participant and for example the using of pseudonyms for interviewees was adapted (Eriksson & Kovalainen, 2008, chapter 5). Confidential company information was also protected.

3.3.2 Interview as a research method

Interviews are among the most important types of case study data (Yin, 2009). I chose as my data gathering method the semi-structured interviews in the case companies. To increase the robustness of my research, I conducted several interviews within each company. My aim was to have at least two to three interviewees from different levels within the company, in which I succeeded in by executing two to four interviews per case company. To corroborate the information, I aimed to make the interviews as individual ones and not as group-interviews although two sets of interviews were done in pairs due to the wish of the company. Some of the participants asked questions in advance, when I delivered a set of question examples for the interviewees although additional questions deriving from the conversation where still possible. This was a way for me to mitigate the social desirability bias, as was also that I discussed early on with the interviewees the different possibilities for participation, one of them being completely anonymous. Additionally, when making the interviews, I paid close attention to articulating the questions, to reduce the bias, which Yin

(2009, 102) states to be a major weakness of interviews. Among other weaknesses of interviews as sources of evidence, Yin (2009, 102) mention the response bias, inaccuracy of the information due to the interviewee not remembering the facts correctly on the spot, and reflexivity, meaning that the interviewee aims to answer to the questions as expected. These biases were also mitigated with neutral questions setting, with possibility for respondents to verify their answers further on and with corroborating the information from other interviews and secondary data sources.

3.3.3 Sampling of participants and making the interviews

In this research, the sampling was conducted with “snowball” method, also called as “chain” method where the sample forms gradually as each participant can suggest further individuals to be contacted for participation (Noy, 2008). In this research, the participants for the study were found with the help of many persons in the companies. Before, during and after the interviews, possible further candidates for the research were collected.

The interviews were executed in two rounds - spring and fall. From spring, the first interview was on 8th March and the last one done was 24th May. The fall interviews were done between 30th August and 21st September. The interviews were face-to-face interviews in the company premises and lasted from 28 minutes to 67 minutes, with most of them approximately 50 minutes. Two of the interviews were done in a group of two, others individually. A total number of 10 persons were interviewed in eight different interview settings. Most of the interviewees were managers related to corporate responsibility, sourcing or quality. In the interviews, I also asked the companies for any additional materials, for example internal memos or presentations of the topic and received two pieces of this kind of material. Additionally, during the interviews, I saw internal material of sustainable supply chain management tools (2 pieces) and sustainability presentations (2 pieces), which could not be delivered for me nor referenced directly. I have agreed with the case companies that the material from the interviews will be anonymous which is why I have changed the names when referring to the more confidential information received from the interviews. Nevertheless, in some of the citations the company would have been easily

figured out by the reader why in these cases the interviewed persons are referred to for example with a person Ca, being a person from company C. All the citations were confirmed afterwards from the interviewees giving a permission to use them as such.

3.3.4 Secondary data

My secondary data was publically available and found for example from the internet pages of the companies and of a general media search in the internet. All of the companies publish annual reports with corporate responsibility sections on their internet pages which provide good sources of information on sustainability management in the companies. The coverage of the report as well as the amount of additional information in the company internet pages varies largely between the companies. This data used is publically available and also listed in my references. In addition to working as the secondary data for analyses, the different written materials also played a major role as to corroborate the information from the interviews, which is suggested by Yin as the most important role of documents in case studies (2009, 103).

3.4 Validity and limitations

In qualitative research, some limitations always exist coming from human error in the interpretation and analysis as well in the data validity (Eisenhardt, 1989). Also a relevant limitation is relating to the biases in having the data mainly from interviews, (Eisenhardt, 1989) although this was mitigated with many ways described above. Possible biases are researcher related where the researcher might biasedly lead the conversation and be guiding the answers, or response related where for example the interviewees might answer what they believe the interviewer wants to hear (Yin, 2009). Bias and subjectivity issues are important factors in influencing the credibility of case studies and qualitative research in general, (Flyvbjerg, 2006). Nevertheless, Flyvbjerg (2006) states that actually these issues are relevant in all research although in different ways as in quantitative research the main

downside in subjectivity happens in preparing the questionnaires or deciding on the variables.

The lack of a systemic approach in case study research is further limitation as described by Yin (2009). With this research, the sample of companies as well as interviewees per company was relatively small, which forms a clear limitation for the generalizability of the research results. As one person from one company could have been the sole answerer to a certain question, then his or her opinion receives larger value than what it would in a larger sample. Forming conclusions from case studies is anyhow justified and can form valuable theoretical contributions with or without the possibility for generalization (Flyvbjerg, 2006). Flyvbjerg (2006) concludes that some case studies might be really good grounds for generalizability but not necessarily all are nor should even be. Flyvberg (2006) highlights the importance of profound examples in research such as case studies typically are. In addition, also Yin (2003, 38) refers to the typical complaint towards case studies as being hard to generalize into other cases. The relevant thing to note is that although the sample might be small, the results of case studies might be important contributions to the research in terms of being generalizable for the use of theory building (Yin, 2003, 38). This is where this also aims at: to contribute to the theory by the findings from a case study example. Although the results might not be generalizable for multiple industries, it can still importantly impact the theory.

3.5 Data analyses and theory development

After the data collection, and also between the two rounds of interviews, the data analyses were performed. The process started by analysing first each interview, then each unit of analyses individually, phase called the within-case analyses, and then followed by cross-case analysis (Eriksson & Kovalainen, 2008, chapter 9). The cross-case synthesis –method is especially good for comparing the data of two cases or more (Yin, 2009, 156). The idea is to form word tables where data from the different cases is easily comparable and can be analysed with a uniform framework (Yin, 2009, 156-160). As the tables are not numeric and

no quantitative data is used, or only in a minor role, then the interpretation is based on strong arguments and proper reasoning behind them (Yin, 2009, 160). In analysing the data and setting it to the tables, I was using the grouping to themes –method with an *inductive logic*. Inductive logic means that the logic from reasoning is deriving from the data.

Systematic interpretation of the data helps to improve the results of the research and their validity. In conducting the analyses, a typical pattern in case study research was followed, where first single unit analyses are done followed by a cross-case synthesis to conclude the analyses. Thematic analyses were used for the organization of the data first within the individual units of analyses and then following with the same themes in the cross-case synthesis. Eriksson and Kovalainen (2008, chapter 14) stated: *For this purpose (to organize empirical data with thematic analyses) a theme can be defined as a concept, trend, idea, or distinction that emerges from the empirical data*. More information about and the results of the analyses is presented in the following chapter of the findings of my research.

4. Findings

In this findings section, the findings of this research are discussed together with relevant literature. To answer the research question of how sustainability can be managed in multi-tier supply chains, this findings chapter presents the different approaches and tools on a more general level and is not aiming to judge, appraise or criticise the practices of the participating companies nor to compare them with each other. Especially towards the end of this findings chapter, the focus is on the cross case synthesis to support the reader to seeing the “forest from the trees”.

The findings chapter is divided into sections on the basis of the theoretical framework used in this thesis. The first section analyses the underlying concepts and the necessary groundwork done in companies for sustainable supply chain management (SSCM). This part works as an introductory to the case companies and to the topic and is largely based on data from archival materials. These analyses of the underlying concepts form the base for moving on to the centre of the framework in the second section of this findings chapter, where the results of analyses based on the interview data are presented. These following two parts are formed around the core of the theoretical framework. It is basing on the division of Brockhaus et al. (2013) in presenting two approaches for sustainability implementation into the supply chain; the mandated and the collaborative one. Moreover, based on my results from a multi-tier SSCM context, I propose a third approach for sustainability implementation, which forms one major contribution of this research. Finally, at the end of this findings chapter, the adapted framework is exposed as well as a short conclusion of the findings.

4.1 Company internal preparations for sustainability implementation to supply chain

In the framework of this study, which was presented in figure 2 in the end of literature review, the underlying concepts were displayed as three circles to present the different steps in company internal implementation. At the core, was the multi-tier sustainable supply chain management, which had the background concepts of firstly sustainable supply chain

management and further also sustainability management. Therefore, this chapter is reserved for analysing these concepts while also briefly presenting the sustainability approaches of the case companies. The analysis for this chapter is largely supported by the secondary data sources, being the archival materials gathered for example from the annual reports of the companies.

4.1.1 Sustainability management as larger underlying concept

Before discussing the implementation of sustainability to the supply chain, the company internal preparation for sustainability implementation is discussed through the underlying contexts. As reasoned in the literature review, the internal sustainability management is a necessary starting point for a sustainability related initiative, forming the largest context of the framework. All of the analysed companies had taken major steps in implementing their sustainability, the companies for example all had a systematic corporate social responsibility management function and annual responsibility reporting. Sustainability has been integrated into the actions of the companies and was not seen as philanthropy. In general, the importance of sustainability has been acknowledged by the companies and the interviewees, as the examples below show:

“Responsibility has always been part of the company. At the beginning the employees gathered around the same dinner table. The focus was first on social issues ... like building a company’s own kindergarten. The way of working has always been comprehensive” (Sonja, personal communication, 2016)

“We have built our business in a responsible manner since 1891 and intend to do so into the future.” –Fazer Group’s annual review 2014 (Fazer, 2015)

The sustainability programs of the companies all have their roots on the thorough analyses of stakeholder opinions. These opinions are analysed through a separate stakeholder

dialogue-process or in some cases even visualised with a materiality matrix. The dialogue with stakeholders brings front the voice of consumers and plays an important role in defining the sustainability strategy (Outi, personal communication, 2016). In the interviews and in the annual reports of the companies, for example customers, authorities and suppliers or partners were mentioned as having a major influence in the company's sustainability work as stakeholders. These stakeholders are the main audience of the annual reports of companies, but they might also have other benefits. For one of the case companies, the approach to sustainability has already for a long time been wide taking multiple aspects into perspective simultaneously. Only quite recently the approach to sustainability has changed to a more systematic one. In the change, the GRI G4-reporting guidelines have played an important role.

“Responsibility work has been done in the company for a tremendously long time already. But it might not have been that visible. Now, we wish to tell about it (our responsibility) more and develop it and get the work more structured. That is why we are using the GRI G4 guidelines now.”
(Outi, personal communication, 2016)

Although in the case companies, sustainability management seemed to have already reached a certain level, undoubtedly there still remains integration possibilities. Sustainability implementation within the company can be seen as a change management process. (Epstein, 2008, 202). Epstein (2008, 202) suggested a change management framework for the internal use within companies comprising of a four steps iterative process: Plan, Do, Check, Act. In addition, the internal communications in reasoning the need for change was highlighted (Epstein, 2008, 202). It became evident that the case companies had also systemic approaches for implementation of the sustainable supply chain initiatives for use within their own companies. From the data analyses, important themes within the internal sustainability implementation process rose and they will be analysed shortly.

The importance of internal implementation has also been highlighted in other studies. A framework for SSCM by Akhavan and Beckmann (2016) is formed around 6 categories of

SSCM practices where internal integration and governance was the first one. Also, Grimm et al. (2014) have researched the factors that are critical when companies wish to succeed in implementing sustainability initiatives in the supply chain. Their division is made to buyer company internal and external factors. The internal factors refer to the focal company for example resources available. While, among the external ones, factors such as relationships, supply chain partners, and context were listed. (Grimm et al., 2014). When compared to the division of SSCM practices by Akhavan and Beckmann (2016), the internal critical success factors relate to the internal integration and governance category.

Common for both Grimm et al. (2014) and Akhavan and Beckmann (2016) is for example *the support from the executive level*. Support from executive level is widely accepted as a factor in also other literature but was in my research somehow surprisingly not mentioned by the interviewees. This does not mean that it would not exist in the company, but it could even be reasoned to mean quite the opposite. It might be that the support of executive level is such a factor that existence of it comes to mind only when there is a lack of it. In a normal situation, when there is sufficiently of support from the executive level, it might stay quite invisible for the daily work of an employee and does not come to mind in the discussion. This claim is supported by my secondary data from the annual reports and the internet pages of the companies, where it is visible that the executive level was supporting the sustainability strategy implementation for example in the CEO's reviews of two of the companies:

“Over the course of 2015, Kesko continued to assess human rights related impacts in accordance with the UN Guiding Principles on Business and Human Rights. As part of the human rights assessment we listened to our stakeholders’ views on matters such as how they feel about human rights in sourcing chains and customer situations.

Kesko aims to identify the entire supply chain of products, while also ensuring that the ingredients are responsibly sourced. Work to assess the origin of the ingredients in own brand groceries – Pirkka and K-Menu products – was carried out in 2015.”. (Kesko, 2016a).

“There is a need to implement more sustainable ways of working,...” – Ceo’s review, Fazer annual review 2015. (Fazer, 2016a).

The executive level support is visible not only in the Ceo's review, but especially in the organizational structure. As in the annual reports, the organization of sustainability management is often described in the picture. Fazer annual report from 2015 states that the *"the ultimate responsibility lies with the board of directors and Group Management Team."* (Fazer, 2016a). In my opinion, this is a proof for executive level support and commitment on the topic. The executive level support is especially important already for guaranteeing the resources needed for the implementation and for getting the rest of the company involved.

After having the executive level commitment guaranteed, it is important to communicate that thoroughly to the rest of the company. Communicating the importance of the change is recognized as the important first step for sustainability implementation within companies (Epstein, 2008, 202). It is a task often done by or at least with the support of the executive level with a main idea of getting the buy-in from within the company. This task should not be underestimated as it is noted that getting the internal support for sustainability related initiatives might be surprisingly hard (Deloitte, 2015). Sustainability related crises and the media's communication on those has a positive impact for companies realizing the importance of sustainability and helps in the getting the internal buy-in (Deloitte, 2015; Handfield et al., 2005). Luckily, there anyhow exists also other aspects helping in getting the internal buy-in. Epstein (2008, 203) suggest to use the internal management systems for example related to remuneration to guarantee aiming for the hoped performance. Handfield et al. (2005) highlight the need of middle manager level participation in the defining the strategies, especially on discussing the SSCM practices. In the following, these sustainability strategies for the supply chain management are discussed as the second context in the framework.

4.1.2 Sustainable supply chain management as smaller underlying context

When looking at the framework of this thesis presented previously in figure 2, the context of sustainable supply chain management exists within the sustainability management context. This was also visible in all of the case companies' sustainability agendas where

supply chains played some role. The importance of sustainable supply chain management (SSCM) in relation to the overall sustainability of the company was also visible in the sustainability strategies. The sustainability agendas of the companies included supply chain management in the following ways:

Company A, retailer

The company has identified its focus areas in its “Responsibility Program” which is based on a materiality analyses taking the stakeholder expectations into account. The program forms of six main areas which are: 1) Responsible operator, 2) For the benefit of the community, 3) Working community, 4) Responsible purchasing and sales, 5) Wellbeing for customers, and 6) Mitigation of climate change. The closest link to sustainable supply chain is in the area of 4) Responsible purchasing and sales, of which the explanation is: *“Customers must be able to rely on the fact that the products offered by stores are well-researched, safe and sustainably produced.”*. (Kesko, 2016a, 8). This responsibility area is furthered described with the following six bullet points:

- *We purchase and sell responsible and support customers in making sustainable choices*
 - *We provide customers with information and support for responsible buying decisions*
 - *We make responsible actions visible and easy for customers*
 - *We develop our product selections while listening to customers*
 - *We ensure responsibility in the supply chain*
 - *We are accountable for the safety and quality of products.*
- (Kesko 2016a, 18).*

From these descriptions, it is visible how the SSCM has major role within the company’s sustainability work. The work is strategic, structured and reported to stakeholders. The company has also published five objectives relating to responsible purchasing and sales together with information about progress (Kesko 2016a, 19-20).

Company B, supplier

The responsibility approach of Company B is presented in their annual report as three embedded circles. In the core is the responsibility vision: “*Fazer for responsible taste sensations*”. This is surrounded by a thin circle with only the text *Responsible offering*. The large outer circle forms the major part in the graph and it is divided into five sections each having a small picture, a header and a short text of one or two sentences. The headers of the sections are: 1) Running business, 2) For health and well-being, 3) People matter, 4) Fair value chain, and 5) Part of the environment. (Fazer, 2016a, 6). Within these, sustainable supply chain has a clear role in the section of “fair value chain” as value chain is an often used term in the food industry which can be seen as a synonym for supply chain. The short text under the header for fair value chain is the following:

“We operate responsibly and create fair business opportunities throughout the chain we are part of.” (Fazer, 2016a, 6)

Relations to SSCM are visible also in other aspects of the responsibility approach, for example in the People matter -section the text is “*Fair play with everybody working with us*” (Fazer, 2016a, 6). This statement could be seen to cover the suppliers *working with Fazer* and therefore relates to SSCM.

In addition to the responsibility approach, the SSCM is visible for example in the following page of corporate responsibility review, where a picture shows the three different business lines of the company all having their own focus areas on responsibility. Two of the three relate to food chain responsibility, for example the confectionary unit’s goal is about sustainable cocoa purchasing, which will be discussed more further on. (Fazer, 2016a, 7). These examples are to show how the SSCM is in a major role in company B’s sustainability and how the work is integrated, structured and reported.

Company C, supplier

The sustainability agenda of company C has four focus areas, which are 1) Economic responsibility, 2) Social responsibility, 3) Environmental responsibility, and 4) Animal

health and welfare. These are presented in the annual report of the company in a figure of the Corporate Responsibility program as vertical boxes. Below these in the figure, there are two horizontal boxes looking like they form the base of all of the focus areas. The other horizontal box has a text *Stakeholder cooperation & communications*, and the other has a text of *Sustainable & transparent supply chain*. (HKScan, 2016a, 27). Already, the first sight of the figure is suggesting that the SSCM has an important and integrated role as in the figure it seems like forming a base for the other areas of responsibility. This impression is supported in the texts of the focus areas, where either the word value chain or supply chain is used or the supply chain described as words in the following ways:

Economic responsibility: Responsible long-term profitability of the Group and its value chain.

Social responsibility: Responsible products, employee wellbeing and responsible supply chain.

Animal health & welfare: Responsibility in genetics, in operations at farms, during transportation and at slaughterhouses.

(HKScan, 2016a, 27).

Each responsibility area is also further described in the report, they are strategic and have derived from a dialog with the shareholders done in 2014 and constantly revised. (HKScan, 2016a). In addition, sustainability and supply chains are visible in the company from the basis of guaranteeing that all products under the brands HKScan and Kariniemi are of Finnish meat. (Cb, personal communication, 21.09.2016).

Already at a glance to these sustainability agendas of the three case companies, it can be clearly seen that the companies are engaged in sustainability issues and that SSCM has a central role in them. In the food industry, when discussing the origin of the food, the need to manage also the suppliers further than first tier comes quickly evident. This is why the multi-tier perspective is approached next.

4.1.3 Multi-tier perspective in the sustainable supply chain management context

When proceeding from managing the first supplier level, towards the second and further tiers, the amount of suppliers expands quickly. For research purposes, the multi-tier case studies have often been performed with simplified supply chain structures (Choi & Wu, 2009b). On business on the other hand, the response for growing amount of suppliers can be more thorough prioritization. In the following, both of these are gone through, starting with a simplified analyses of the dyadic structure between the case companies and continuing with analysing the ways of prioritization used by the companies.

The case study had a built-in dyadic relations setting due to the two-tier supply chain formed by the three case companies. When the research scope is extended from these two tiers to the second company's own supplier management, then it can well be said to represent a multi-tier setting. If first having a look only on the relations between the case companies, the initial analyses of data, showed that the multi-tier supply chain management is not such a common demand yet that the companies would be focusing on it on a standalone basis. Instead, it is done mostly through the management of the first tier of suppliers or together with the general CSR work or part of stakeholder relationships management. More in detail, the retailer (Kesko) aims to improve its sustainability within its focus areas. It impacts all of the suppliers on what it comes to sustainability issues on for example the supplier selection and the code of conduct asking to be signed. The retailer did not have any additional, company specific requirements for the two supplier companies analysed in this case study. This seemed to be influenced by the general assumption that these supplier companies would probably already be on a good level on sustainability issues as they are operating in Finland and generally known as responsible companies. Therefore, it was not in the aim of the retailer company to challenge them further in their sustainable supply chain management initiatives.

Hence, it can be concluded that in this case, the mediating role did not exist between these two suppliers and the retailer company as could have been expected from the literature. Instead, all of the companies were on a high enough level on their sustainability work that

the pressure from their shareholders and the company internal motivation for sustainability management has had a stronger role than that of customer companies sustainable supply chain management implementation requirements. The bases for these were presented in the above by analysing the sustainability management contexts of the companies. Therefore, in the following, the ground work done in the companies in managing the high amount of their multi-tier suppliers is discussed.

When referring to sustainable supply chain management at large, it is commonly recognised that prioritization is needed. One proof of this need is also here given from the retailer company. The retailer company recently started a project to track down the ingredients used in their products. The vast project included a sample of around 2 000 products to be traced all the way back to the raw materials. The work required one person's full time work capacity of a total of 6 months (Aa, personal communication, 03.05.2016). The work was ground breaking in the industry. Although this was evolutionary as such, it was only a start, as the retailer has as much as 200 000 products and 20 000 suppliers (Kesko, 2014). Looking at the task of finding complete transparency in the supply chain, this example of tracking down 1% of products in 6 months gives a good perspective, how it is simply not possible for the retailer to aim to manage all of the tiers of its deep supply chains by itself.

"The route is quite short usually for a pineapple, banana or watermelon. There might be some trader or transporter between us and the farm. But then again, ice cream or cookies might be really difficult (to track). There's many ingredients coming all around Europe, even around the world. It is really challenging to track down all of the sources of raw materials and there's not so many companies even in Europe that could do this. It requires a huge amount of work, and we are starting to do it a bit by bit." (Aa, personal communication, 03.05.2016)

It is easy to understand that the large supplier base causes challenges in sustainable supply chain management. Already only the amount of information to be collected grows to an extent hardly manageable. If the above example would be made simpler and the company

would receive the information directly from its suppliers, it would still be a challenge. Only collecting the information from suppliers and storing it for own purposes would be an extensive task, as simply the amount of suppliers and products is that immense. Supporting systems come in need (Epstein, 2008, 202) such as an IT-system where data would be easily stored and available for use. (Aa & Ab, personal communication, 03.05.2016). Nevertheless, how good the supporting systems are, prioritization remains obligatory, especially in relation to multi-tier supply chains. The question remains what are the bases of the prioritization decisions.

In all of the case companies, the importance of prioritization in their multi-tier supply chain management practices was highlighted. Prioritization may be done on the basis of many different aspects such as minimizing the largest risks relating to reputation or environmental impacts, or starting where it is easiest to succeed or where the possibilities for impacting are the largest. In the following, different criteria from the companies are presented. To start with, the retailer company used as one of its focus areas the sustainability of own brand products, which was also the division of the above example of 2 000 products tracked back to the raw material producing countries. The choosing of private label products as a starting point was rationalized in the following way:

“It is hard for us to get access to the product ingredient information of another company’s suppliers. It is in their recipe that where does all come from and it is difficult for us to get that information. That is why we have started with our private label (Pirkka) products because they are under our control, the information is available in our IT-systems”
(Ab, personal communication, 03.05.2016)

In the above example of the private label products as starting point, the prioritization was made due to the too vague amount of product and the too few amount of information and controlling possibilities. This can also be said to be prioritization due to the ease of it – first collect the low hanging fruits like the many change management theories suggest. I would anyhow suggest that this approach is also based on the common sense that a company needs

to start the change from within own company and minimize all the risks related to them as the own brand products are more related to the retailer company than the other products sold in the stores and a breach in own products would also cause a larger reputational damage when in the eyes of the consumers. Reputational risks can derive from unsustainable behaviour in the supply chain of a product, and when reaching public awareness might harm the brand of the company purchasing the materials (Hanna, personal communication, 2016).

Moving towards the larger picture, prioritization on the basis of risk was an aspect acknowledged in all of the case companies. Different risks that were taken into consideration could be grouped to either relating to company internal or external impacts. Company internal risks were for example deriving from the food safety or from the usage of the product in the company's own production. It is determined within the company that which materials are the ones that are seen as most important (Hanna, personal communication, 2016). The risks relating to food safety are large on perishable products. (Outi, personal communication, 2016). Also ingredient's usage has an impact on the related risks and their management, with an example given by Jani (Jani, personal communication, 2016) stating that if the material will be heated by the company, certain bacteria would die in the heating process and in this case the risk related to the purchase is smaller than with the same material to be used without heating. Important aspect relating to the usage was also the criticality of the product in own manufacturing (Amanda, personal communication, 2016) and the volume of purchases (Karita, personal communication, 2016).

Company external risks on the other hand related to the sustainability of the product during its supply chain so far determined for example by the country of origin of products (Sonja, personal communication, 2016). Here also the product specific risks were acknowledged as all of the companies for example had mentioned soy and palm oil purchases within their special focus areas due to the generally known high sustainability risks in their production. The companies might anyhow have these focus areas due to different reasons. For example, one interviewee, determined the reason to be that as the products are known to be harmful for the environment, there also exist the best possibilities to have a large impact on the global warming (Outi, personal communication, 2016).

In addition to the product related risk, the country of origin risk was also an aspect all of the companies used in prioritization in a major role. The general idea the companies had is that they take into consideration the peculiar aspects of the product to be sourced from that country. The suppliers from Finland and Scandinavia can be thought to be working well already but the suppliers in risk countries, for example in developing countries, in Asia, Africa or South America were more on the focus of SSCM initiatives by the case companies. Suppliers in risk countries were for example audited or asked for certificates where as their competitors in low risk countries were not. The case companies had their own tools for analysing the country risk, basing for example on the BSCI-rating (Susanna, personal communication, 2016). This BSCI, Business Social Compliance Initiative provides a risk classification of countries taking into consideration 6 different risk dimensions. The data is freely available on internet and is basing on World Bank's information. (BSCI, 2014). Data for the differences of the countries can be also looked up directly from the World Bank listing on the ease of doing business in the countries. Finland is 10th, whereas China is on 84th, India on 130th and Congo 184th. (The World Bank, 2016).

These bases for prioritization were important determinants in the SSCM work by the companies. They were also in close relation to the sustainability focus areas described earlier in the analyses of the larger underlying concepts of sustainability management approaches. After having now presented the analyses of the underlying concepts as in the framework of this thesis, the next chapters will move on to the detail level of supplier management approaches being in the core of the framework of this research. First, a short reminder is given of the core of the framework which was presented at the end of the literature review in figure 2.

The mandated and the collaborative approaches for sustainability implementation are the two categorization of Brockhaus et al. (2013) which were used in the framework of this thesis. These categorizations were on the horizontal axis of this framework. The vertical axis was the "structure of the supply chain" meaning whether the second tier suppliers were approached directly or indirectly through the mediating role of the first tier of suppliers. The direct route was named "closed loop" structure in the supply chain relations and the indirect

way was named the “open loop”, (Mena et al., 2013) where the focal company can be said to be managing its second tier suppliers through the first tier suppliers by assigning them an agent role to mitigate the sustainability demand further in the supply chain. Furthermore, a transitional category was also added between the open and the closed loop, meaning that the open structure is developing towards a closed one (Mena et al., 2013).

Among my research intention, I wanted to explore that which of these two approaches for sustainability implementation were used and through which kind of supply chain structure. These results are showed in the following chapters, first the mandated approach is presented, then followed by the collaborative approach. After of which, a further contribution of this research is presented in the form of a suggested third approach for sustainability implementation, named as the indirect approach.

4.2 Mandated approach for sustainability implementation to supply chain

As described above, in my research I was aiming to find out how the supply chain structures, being the routes of implementation are used in which of the sustainability implementation approaches. The results of the empirical research on behalf of this mandated approach are shown in the table 2 below. There one X-letter represents one finding per company related to the group in the matrix. The importance of the finding is represented with a three-point scale with (x) signifying a small relation to the group, x a medium relation and **X** a large relation. This summary clearly shows that this implementation approach is used mostly in the open loop way. This means that the first tier suppliers were assigned mediating roles, while the priorities of the focal company remained in the managing of the first tier and only smaller effort was paid for aiming to support or monitor the successful mediating role.

Approaches for sustainability implementation in the supply chain

Mandated*	
Open**	<p>X X X X X X X</p> <p>x x (x)</p>
Transitional**	<p>x x x</p>
Closed**	

Table 2: Findings of the mandated approach

In the following, the most important findings in this mandated approach are presented. First the different methods used according to this approach are presented. Next, a closer look is taken on the monitoring of supplier performance. Thirdly, the relation to the next category is analysed.

4.2.1 Supplier selection criteria and auditing as main methods in mandated approach

The empirical findings showed that the mandated approach was most commonly used in the open loop structure. This was natural for companies as they had formal contracts with their first tier suppliers only, being the ones who they made the transaction with. In this way, the

management of further tier suppliers was delegated to the first tier suppliers allowing them a mitigating role.

“We make a contract with the seller, the one we make the transaction with. In the specification we can then say that from which producer or site it should come from. ... We make one contract where we aim to have all our requests covered.” (Jani, personal communication, 2016)

If looking at the ways of mandated sustainability implementation more in detail, there existed very similar methods used by the companies in this category such as code of conduct signatures and using of different certificates. In general, in the case companies, the careful supplier selection was an important first step. Certain clearly defined criteria were to be fulfilled by the potential suppliers in order to proceed in the supplier selection process. For example, a self-assessment questionnaire was to be filled and “passed” (Susanna, personal communication, 2016) or the product specifications approved (Karita, personal communication, 2016).

Similar results have been received from a study by Deloitte (2015) stating that the single most effective method for sustainable supply chain management is to fully include the wanted sustainability criteria in the screening of potential suppliers. This way, only the complying suppliers proceed towards signing of the contract (Deloitte, 2015). This reflects the results of my studies as the supplier screening was an important part in all of the companies – although it might comprise of different scope of sustainability issues and be in a slightly different part of the supplier approval process. One way was to collect sustainability information with specified forms, rate the information and use it in the choosing of suppliers.

When we get any potential suppliers in these kind of tendering processes, then we collect information with these forms. Then we evaluate and rate it, alias use it as purchasing criteria.” (Outi, personal communication, 2016)

A major step as a part of the screening process or directly after it, was the accepting of the company's policy also called as the code of conduct. This was a relevant finding within all of the case companies. The code of conducts can be based on relevant initiatives such as the Global Compact. It was common to publish information openly in internet; the retailer even published company purchasing principles (Kesko, 2016c). All of the code of conducts in the case companies were publically available in the internet, stating for example the following.

In 2007, we published the Group's ethical principles which are based on Fazer Group's values and the UN Global Compact, which aims to promote corporate sustainable development and good corporate citizenship. (Fazer web page, no date)

The Group strives to ensure that all stakeholders will have confidence in that the entire Group operates responsibly, and requires its business partners to follow likewise responsible conduct. (HKScan, 2012)

Auditing suppliers is a further SSCM method all of the interviewed companies used but in different ways. It was often included as part of the supplier screening process, as a final step before approval as supplier but it was also used for monitoring supplier performance and guaranteeing the wished results. Common for auditing practices is that they required lots of resources which meant they required also thorough prioritization for risk management as discussed earlier. Auditing, monitoring of supplier performance and especially what happens after failed audits, are major themes in this mandated approach for sustainability implementation to supply chain. Normal preparations to auditing include determining the criteria for selecting the suppliers to be audited, determining the criteria to be used in the audit, who are involved in the process and how often they repeated. Also an important aspect to consider is that what is done with the results of the audit, and especially in the cases where the performance was not as hoped.

It seems that sustainability evaluation criteria were easier to have in the supplier screening process for potential new suppliers as pass or fail criteria. When it came to the evaluation of current suppliers, the monitoring of sustainability performance was not that commonly

discussed among the interviewees. It seemed that more traditional performance criteria were dominating and any special sustainability criteria were not followed in these evaluations (Susanna, personal communications, 2016).

“Every single delivery that comes to our site is checked and evaluated. We for example follow any quality mistakes in the deliveries. ... Another aspect that is being followed is the delivery accuracy “ Susanna, personal communication, 2016

The major problem with auditing seemed to be the cost and difficulty of using it. The companies seemed to trust best the audits performed by themselves. For example, the meat supplier company chose to audit by itself all foreign meat suppliers. The company is mainly sourcing meat from Finland or nearby countries, but on some categories the nearby markets cannot provide the meet needed and then it is sourced for example from Australia or Brazil. In these rare cases a quality manager from the focal company will travel to the location to perform the audit. (Ca, personal communication, 25.05.2016). Self-made audits were also in a major role in the other companies’ supplier management practices. This again means that the method is not easily scalable especially not on what it comes to further than first tier suppliers. To help in scalability, third party audits and certificates were also used. For example, the retailer company was asking auditing certificates from all suppliers in the risk countries (Aa, personal communication, 03.05.2016). By using third party services, some more indirect benefits of auditing would remain unreached. Susanna (personal communication, 2016) mentioned audits to be really teaching also for the buyer company itself. They are situations where general understanding of the supplier’s situation is improved which helps in the supplier relationship for example in quality negotiations. (Susanna, personal communication, 2016).

Literature is also discussing the pros and cons of auditing. An example from multi-tier audits is given by Wilhelm et al. (2016) in their case of a tea supply chain and its raw material producers, being the tier two for the buyer company. There, the tier one suppliers performed the audits for the tier two suppliers as many as 3-4 times per year. This is an exceptionally

high rate and probably explained by the fact that the tier 1 suppliers had clearly defined sustainability to be a source of competitive advantage for them. The audits formed of field visits and included certain sustainability indicators mainly environmental issues like the use of water and type of seeds used. Additional monitoring was done in the form of taking samples from tea and analysing it in external laboratories. (Wilhelm et al., 2016). Additionally, in the cases of Wilhelm et al. (2016), some social issues were monitored although issues such as sexual harassment are nearly impossible to be thoroughly tracked, whereas the systems for example to verify the age of employees are possible to be monitored. This indicates that the findings of the audits might not always tell the whole story and cannot be trusted blindly. The possibilities for fraud audit results do exist, which relates to my finding that the case companies seem to prefer audits made by own company or alliance company members to those made by third parties. Furthermore, if now a common way seemed to repeat the audit of certain suppliers in every 3 or 5 years (Susanna, personal communication, 2016), few would be the first tier suppliers that would be willing to audit their suppliers up to three times within a year.

After having determined the sustainability requirements, as well as the processes and tools for achieving those, a further important aspect is to prepare for the breaches in performance and the handling of non-compliances. One way is to have the auditing as a final step in the supplier approval process (Amanda, personal communication, 2016). This is easy to use in a way, as if the auditing is done before the supplier approval it is clear that the supplier is willing to perform well in the audit if they are hoping to get the customer deal. Further example statement from the interviews said:

“We will not be purchasing from them before this matter (a negative finding in an audit). has been cleared with them, ... , before they (supplier) have more information of the traceability of their raw material”. Susanna, personal communication, 2016

When auditing is done for current suppliers, the termination of purchases was the corresponding act. Other research has also shown that in the case of non-compliances by

suppliers, usually the focal companies have reserved them the possibility for the termination of contract (Deloitte, 2015). Although this was not necessarily done that often it was at least used to assure the successful implementation (Deloitte, 2015). This was also a finding in my research, although also the termination possibility was used but not easily. If not using the termination possibility, the other ways of dealing with the breach could include more collaborative methods of supplier development (Deloitte, 2015) which would easily start to turn towards the Brockhaus et al.'s (2013) other categorization of approaches for sustainability implementation in the supply chain. In reality, if the companies had the possibility of changing to purchasing from a more responsible supplier, it was a faster way than waiting for the supplier to improve performance for example to achieve a certain certificate (Jani, personal communication, 2016). If other potential suppliers were not available, a possibility was also to try to approach the problem from product development perspective and see if the material could be replaced or removed. (Jani, personal communication, 2016).

4.2.2 Mandated approach benefits from collaboration in implementation

From the analyses of the empirical data, it became evident that the division between the mandated and the collaborative approaches were not that black and white. For example, among the findings of Brockhaus et al. (2013, 176) they conclude that *“the mandated sustainability implementations are characterized by a lack of communication and collaborative behaviour”*. This on the other hand is in contradiction with comments such as these:

“We do have the (sustainability related) criteria for the suppliers but they are set in a conversational way. We will not be asking the moon from the sky... We also have small suppliers and it would not be fair for them if we demand certain systems or programs” (Sonja, personal communication, 2016).

This works as an example from my findings showing that there exists a mandated method for supply chain management but used in a collaborative way. It seemed that many of the

initially mandated methods were in fact not implemented in such a mandated way. This was due to having better results in implementation. This finding relates to the other proposition of Brockhaus et al. (2013, 177) stating that:

“Sustainability initiatives pursued in a collaborative fashion are more likely to be accepted by supply chain members than initiatives based in “mandated implementation”.

The contradiction to this is that Brockhaus et al. (2013) mean the comparison between a mandated and a collaborative way. In their research Brockhaus et al. (2013), none of the 28 companies said to be implementing SSCM practices in true collaboration but nevertheless it was the wish of the suppliers that more collaboration would be used in implementation. In fact, the concept of the collaborative supply chain initiatives was created to be *“the ‘ideal vision’ of supply chain implementation”* (p.176) although it did not exist in real life among the interviewees (Brockhaus et al., 2013). This is why, my findings suggest that the mandated way of implementation could benefit from increase of collaboration but only to an extent of still having the mandated as a dominating way. These notions lead us nicely to the next chapter of all collaborative supply chain management approaches.

4.3 Collaborative approach for sustainability implementation to supply chain

From presenting above the findings related to the mandated approach, in the following the other category of the framework of this research is presented, being the collaborative. Below in table 3, the graph of the findings in this category are presented. There, as previously, one X-letter represents one finding per company related to the group in the matrix. The importance of the finding is represented with a three-point scale with (x) signifying a small relation to the group, x a medium relation and **X** a large relation.

Approaches for sustainability implementation in the supply chain

		Collaborative*
Relationship structure of the parties involved	Open**	
	Transitional**	x x x (x)
	Closed**	X (x)

Table 3: Findings of the collaborative approach

When comparing this summary of the findings of the collaborative approach presented in table 3 to those of the mandated approach in table 2, it comes clearly visible how the mandated approach is the dominating one used by the companies. These findings support the proposition of Brockhaus et al. (2013) being:

“Sustainability efforts are currently implemented in a mandated fashion as a pull process through the supply chain and initiated by the stronger members of the chain (p.174)”

On the other hand, in comparison to presumption from the literature by Brockhaus et al. (2013), the findings of my research did reveal one strong relation marked with **X** and several smaller relations of x and (x) presented in table 3. This can be seen as a surprise as the all collaborative supply chain management practices were unlikely to be found (Brockhaus et al., 2013).

As another general finding from this collaborative approach for sustainability implementation in supply chain, was that the more the second tier was directly involved, the more collaborative the methods appeared. In the following chapters, first the settings in which these findings appeared are discussed together with the main drivers for collaborative approaches. To continue from here, the main methods of collaborative approach are presented.

4.3.1 Collaborative approach exists rarely and is driven by mutual benefits

In the table 3 above it was pictured how the all collaborative approaches appeared only in the transitional and closed loops supply chain structures. While, in the open loop, the mandated approach was the dominating one, although partly done in a slightly collaborative way as presented at the end of the chapter of the mandated approach. It seems that when the direct buying relationship was not direct anymore through the existence of middle hands, the collaborative approaches became more popular - when the issue was important enough for the company. The importance was touched upon in the analyses of the underlying contexts, where the sustainability focus areas of the companies as well as their prioritization decisions were discussed.

For the collaborative implementation, a strong relationship with high degree of mutual trust is especially important. (Brockhaus et al., 2013). Brockhaus et al. (2013) reason that these could accumulate from an originally old relationship which develops into sustainability related issues as well. This happened in the case of HKScan Agri. The relationship between the different tiers had existed in a way for already from the beginning. In this case, purchasing section of the buyer company was specialised in the sourcing of livestock and also in guaranteeing the high quality. (Cb, personal communication, 21.09.2016). This meant that the livestock farmers are given training and for example introduced to new methods of feeding the animals which are being developed by the buyer company's subsection. (HKScanAgri, no date). The reasons for the large cooperation lie in the company's history, as it roots back 100 years ago when an alliance was established with Western-Finland

farmers who put up a butchery together. (HKScanAgri, no date). From that setting, the company has grown towards the current situation of being one of the largest meat producers in Finland without forgetting the initial task of supporting the farmers. When looking at it from this perspective, the existence of collaborative sustainable supply chain management approach also beyond the first tier seems only natural.

Good relationships were also highlighted by another example. This works also as an interesting example of how the mandated and collaborative methods can exist simultaneously. Here, the attention should also be paid in the difference between auditing and visiting suppliers. Auditing as such is a clear method of mandated implementation but on the other only visiting suppliers would fall under the collaborative. An example is given from HKScan with a habit of frequently inviting the representatives of their buyers to come to visit the farms and butchers. These visits are organized for example if a new person is hired in their customer's buyer team and initiated both by the buyer such as Kesko or by HKScan. The idea is to give the buyers a good overall picture and improve their understanding of the meat production process. (Cb, personal communication, 21.09.2016). On the other hand, these are between the sales department and the purchasing departments and then the both of the company's quality departments can organize their own visits and the formal audits. This is also an example of what companies do to have good relationships with each other, which was a prerequisite for collaborative approach according to Brockhaus et al. (2013).

In the above example of collaborative approach, in addition to the old relationships the mutual benefit was an important driver. This is due to the fact that quality of the meat of the purchased animal is determined by the breeder further in the supply chain. The meat industry has the constant need to guarantee the purity and the conditions of the livestock and also the food they are fed. Finland is a forerunner in the legislation banning the use of antibiotics in growth or preventative cause. As, for example in USA it has been allowed until the beginning of 2017 (Moodie, 2016). To guarantee the wished aspects, such as no preventative antibiotics

used, the company C has to know the origin of its raw materials properly and impacts its suppliers if willing to improve the quality of its products. This perspective of mutual benefit is similar to the other findings of collaborative approaches, which were the medium and small relations.

The findings showed that a major driver in the collaborative approach was the need to guarantee good quality of the purchased raw material. In addition to the meat industry example above, an example is given from the company B. For their high quality chocolate production, it was evident that the availability and the quality of cocoa as raw material needed to be guaranteed. The company collaborates with cocoa farmers to guarantee the quality and sustainability of their product. They are also driven by a concern that cocoa producers would move to cultivating other products or other forms of cocoa that bring more harvest but of which the quality and taste is not on the same level. The company aims to proactively improve the conditions of their deep supply chain. (Bd, personal communication, 31.08.2016).

A further example is given from the retailer in the form of packaging development. Here, the packages getting broken in their warehouse and stores cause harm and costs, but excess packaging material on the other hand also takes important room and affects waste fees. Impacting the packages has therefore been on the agenda of the company A. Recently, a new type of packaging possibility has evolved to radically change the packaging material of fish product and the retailer company has decided to support it. After being contacted by a new package developer company who had presented their new innovation for more environmentally friendly and easier to use packaging material, the retailer company had decided that in the future, they will move to approving fish products packed only in this way. It remained for the retailer to announce the new situation for its suppliers and advise them to be in contact with the packaging material provider to move to using this new method. (Ac, personal communication, 30.08.2016). This is a clear example how the retailer company can in a mandated way impact its first tier suppliers who will on their behalf make the necessary

contracts with the second tier supplier. In this case, the relationship between the retailer and the second tier, being the packaging material producer remained collaborative and without formal agreements. The relationship with the first tier on the other hand would fall into a mandated category although being implemented in a collaborative way as there will be a long enough period to adjust (Ac, personal communication, 30.08.2016). In the end, all of the three tiers would benefit from taking into use the improved packages.

4.3.2 Training and collaboration as main methods in collaborative implementation

The methods of collaborative implementation are fewer and less defined than those of the mandated. From literature, methods such as training, education, collaboration, joint development and supplier incentives would go under this categorization (Akhavan & Beckman, 2016). From these, training as well as the more general collaboration, appeared as the main methods used among the case companies. Some trainings of second tier suppliers were initiated among the case companies but not to such a large extent as suggested for example by Wilhelm et al. (2016). There, where buyers were offered financial support for sustainability trainings. Among this research, the training and education is visible in the examples provided above of for example collaborating with cocoa farmers (company B) and guaranteeing top quality meat (company C).

Other training and education examples included for example the auditing of second tier suppliers with whom was no official contract. In these cases, the contract was with the first tier suppliers who again had their own contracts with second tier suppliers. Still, the buyer company would want to visit some of the production sites. Furthermore, this company in a way, has an informal purchasing agreement with tier two suppliers, meaning that the suppliers could sell their products wherever they want to but as the buyer company is focusing on keeping a good relationship with the tier two suppliers as well, they were most probably aiming to fill the criteria of the buyer company and sell their products to a middle hand supplying the buyer company. (Susanna, personal communication, 2016).

Although increased collaboration as such would seem like something easily to be approved by the suppliers, it necessarily is not that. In the kind of situations as above, the first tier supplier company might be reluctant to cooperate as there remains a risk that they would eventually be stepped over and that the buyer company would purchase directly from the second tier supplier. This is especially if no further modification is made to the product by the first tier supplier in the middle. Clearly, this does not exist in all cases, such as in the one above where the middle hand is a processor and it is evident that the focal company needs to buy the products already processed. But, when the middle hand is only a wholesaler the risk is real which also impacts that the wholesalers might be really reluctant in providing detail information about their supplier (Jani, personal communication, 2016). This is a challenge especially in the collaborative approach as, if the method of implementation is not that black or white, then the reasons behind a training request might also cause more suspicion among the first tier.

In addition to the training method, another major method was the more general collaboration, which was done in many ways in the case companies. Already deriving from the name of this approach, the collaboration was evidently to some extent part of all the findings from this category. Kesko for example has strategic partnerships with some of its suppliers. This means that they share more information with the supplier and might collaborate with product development issues.

Kesko's strategic partnership means we give each other better possibilities to succeed. ... Our cooperation is more open, there is trust and long term orientation. Both of us can make better decisions. (Jere, personal discussion, 2016)

As further methods, some kind of sustainability premiums did exist, which is related to the sharing of sustainability implementation costs and supplier incentives (Akhavan & Beckmann, 2016), but not to a full extent. For example, a premium was paid for products fulfilling the quality requirements, which is in an indirect relation to increased sustainability (Jere, personal communication, 2016). In another example, sustainability was mentioned to

be an order winner but not really a reason for any premiums. This was reasoned by sustainability being in a way already the minimum requirement to a certain extent, indicating that there is no need to pay a premium for it. (Jani, personal communication, 2016). These findings of not having a clear sustainability premium are in contradiction with the suggestion of Wilhelm et al. (2016) about suppliers being able to ask for a price premium from a sustainable product. Either, the sustainability seemed to be a normal requirement already or a sort of an additional advantage as describes by Handfield et al. (2005, 8) stating that for many of the example firms in their research: *“the supplier’s environmental performance can be an order winner, while cost and quality are typically order qualifiers.”*

Many other examples of partly collaborative approaches also existed but not necessarily to such an extent to be mentioned here. Some are presented together with the mandated approach as it was the dominating aspect. Anyhow, already this above presented amount of second tier collaboration was surprising to be found, and therefore forms a considerable contribution to research. After all, the collaborative approach builds largely on relationships and face-to-face interaction and demands lots of resources. Not all suppliers can be in the special position of strategic suppliers. Especially, when proceeding from even further than the second tier supplier management, the collaborative approach for SSCM started to be difficult to differentiate from other sustainability work of the companies in influencing their wide stakeholders. These form the reasons why the third category of SSCM approach was created as presented in the next chapter.

4.4 Indirect approach for sustainability implementation to supply chain

From the data analyses, themes arose that could not be included under the previous division of Brockhaus et al. (2013). Nevertheless, they were aiming for improved sustainability in the multi-tier supply chain and therefore they demanded a new, third category for sustainability implementation approaches. Also Akhavan and Beckmann (2016) list under their SSCM framework a category to cover the management of direct supply chain external

stakeholders. As in their research, also here the last category for SSCM is taking place through the direct supply chain external parties who are for example non-governmental organizations (NGOs), competitors, regulatory bodies and others alike. As the indirect refers to not touching upon any supplier directly there is no division of the findings depending on the supply chain structure of either open, closed or transitional, as was presented with the previous approaches in tables 2 and 3. Therefore, the summary of the findings in this indirect approach is not presented as its own table, but the findings are displayed in the figure 3 of adapted framework at the end of this chapter. As presented in the figure 3, compared to the previous categories, this indirect category is seeming far more common than the collaborative but still resulting with fewer findings than the mandated approach. Especially in this indirect approach for sustainability implementation, the methods of implementation are very interlinked. Nevertheless, they are divided into the two following sub-chapters.

4.4.1 NGO collaboration to indirectly influence the sustainability of supply chain

The findings of this study quite surprisingly indicated that the case companies are making sustainability implementation also in an indirect way through working mainly with NGOs. NGO collaboration is recognised to be beneficial for company's sustainability performance including financial sustainability (Epstein, 2008, 97). Here, a brief introduction to the topic from the perspective of previous research is given. Epstein (2008) reminds that NGO collaboration should be strategic and be linked into the company's sustainability strategy, structures and systems (Epstein, 2008, 101). This way, successful partnerships between companies and NGOs can last for decades. (Epstein, 2008, 99). Epstein (2008, 100) highlights that a clear link between the NGO and the company is an important first step for a successful relationship – the link can derive from common interest. Other important aspects listed are supporting organizational structure, availability of information, trust and sufficient communications (Epstein, 2008, 100).

Companies' collaboration with NGOs can have the aim to improve sustainability in their supply chain (Epstein, 2008, 100) as was with the cases found out in this research. Epstein (2008, 100) shows an example where a company and a NGO partnered to develop a self-assessment questionnaire in environmental performance to be used in the company's suppliers. With quite a similar way but in a smaller scale, two of the case companies are directly including a NGOs' suggestion into their purchasing criteria on fish products. The WWF's suggestion on which fish can be eaten without the risk of over-fishing, has been approved by company A and company B as the policy to form the base of fish product selections. The case companies also actively participated in industry development through NGOs' projects, with some of the projects directly linked to SSCM. Projects were also done together with the NGOs for example the retailer partnered with a NGO to improve the conditions of a fishing industry far away in Asia, being the area of origin from where ingredients to the retailer were also most probably coming from. (Kesko,2016d). This related to Epstein's (2008, 98) notion on NGO participation as improving the business environment of the company by for example positively influencing on the company's industry and also influencing the local communities.

Another example was that the NGO's were mentioned by all of the companies to be important influencers for the industry's sustainability practices. The NGOs are important in raising the issues on the agenda of the companies. (Aleksi, personal communication, 2016). They are pushing the companies forward within their own interest area. Collaboration with NGO's can serve as way for improved sustainability performance (Epstein, 2008, 99). Companies can benefit from NGOs' knowledge when determining their own sustainability criteria to be used for example in supplier screening practices (Ac, personal communication, 30.08.2016).

An example from the stakeholder relationships towards NGOs can also be seen in the annual report of HKScan. There the stakeholder group of "*Media and opinion leaders*" was listed with the subsections of "*Special interest groups and NGOs, Parties and political actors*" who had the following expectations towards the company:

"Information about the company, its operations and events, expertise, responsible operations, continuous development of industry-related aspects." (HKScan, 2016a, 25).

From the same stakeholder group, the company on its behalf was expecting

"Provision of open and fact-based information about the company and the industry, joint industry development projects". (HKScan, 2016a, 25).

This well describes, what was also present in my research, that the cooperation with NGOs is important for companies in challenging the industry forward for more sustainable practices. It was also visible in the case companies that NGO relationships were managed centrally as suggested by Epstein (2008, 97-98), also stressing the importance of them for the companies.

All though, it is worth mentioning that not all of the work done together with NGO's is aimed at sustainability implementation in the supply chain. For example, donating money to supply chain external parties would not be counted to SSCM practices, but on philanthropic actions. Philanthropy as a word is often directly associated with charity donations that are not even aiming for profitability, although Epstein (2008, 98) states that it could in fact be profitable too. Nevertheless, drawing lines between philanthropy, strategic and profitable cooperation and indirect supply chain management practices might prove difficult. For example, all of the case companies appeared to participate in the Yhteinen pöytä (Communal table) -project in Vantaa area (Yhteinen pöytä, 2016). The collaboration aims to diminish food waste (Outi, personal communication, 2016). It remains unclear whether the project serves as a purely philanthropic action for the participating companies or whether it results as strategic and profitable cooperation. This could indeed bring reputational benefits to the companies and also decrease waste costs and therefore also result as cost savings. Nevertheless, it would not be counted under indirect sustainable supplier management practices on, where the aim should be more about impacting the industry's sustainability within its upstream supply chain. Therefore, these more philanthropic kind of projects are not in more detail addressed in this thesis, as the focus is on strategic NGO cooperation that is beneficial at a larger scale

in the supply chain. Especially in the next chapter, the focus is on profitable cooperation with also other parties than NGOs.

4.4.2 Strategic cooperation for cost savings and changing the industry

In addition to cooperation with NGOs, the case companies also mentioned beneficial cooperation with other companies, industrial associations and legislative groups. Also, if looking back at the categorization to either mandated or collaborative, in this indirect category, all of the methods appeared more related to the collaborative ones. In this category the word sustainability *implementation* could even better be changed to *influencing*.

One benefit from the non-traditional cooperation is to combine forces to jointly aim for changing the industry standards. Collaborating with other companies in mutual projects was mentioned by all of the case companies. The projects were often initiated by NGOs such as the “*dialogue for responsible soy*” (Soijadialogi) (Ca, personal communication, 25.05.2016). Furthermore, one company was using Nordic-wide cooperation with similar companies to join forces in purchasing to have larger possibilities for influencing and also to save costs in for example auditing fees. (Aleksi, personal communication, 2016).

Joining forces with other companies takes place also through memberships in associations driving for mutual interests. The case companies were actively participating in NGO initiatives and impacting the general operating environment. Being a member in organizations such as Round Table Responsible Soy (RTRS) and Round table on Sustainable Palm Oil was commonly listed in the companies’ internet pages and annual reports. A summarising graph is also presented below in the table 4. Through these associations focused on a single item, the purchaser could aim at directly impacting the producer’s sustainability at the furthest tier, without necessarily even being conscious of all the middle men. The impact is direct anyhow, for example when buying segregated palm oil which was common among the case companies.

	Round table Responsible Soy	Round table on Sustainable Palm Oil	Member of the cocoa purchasing	BSCI
Company A	X	X		X
Company B	-	X	X	-
Company C	X	X		-

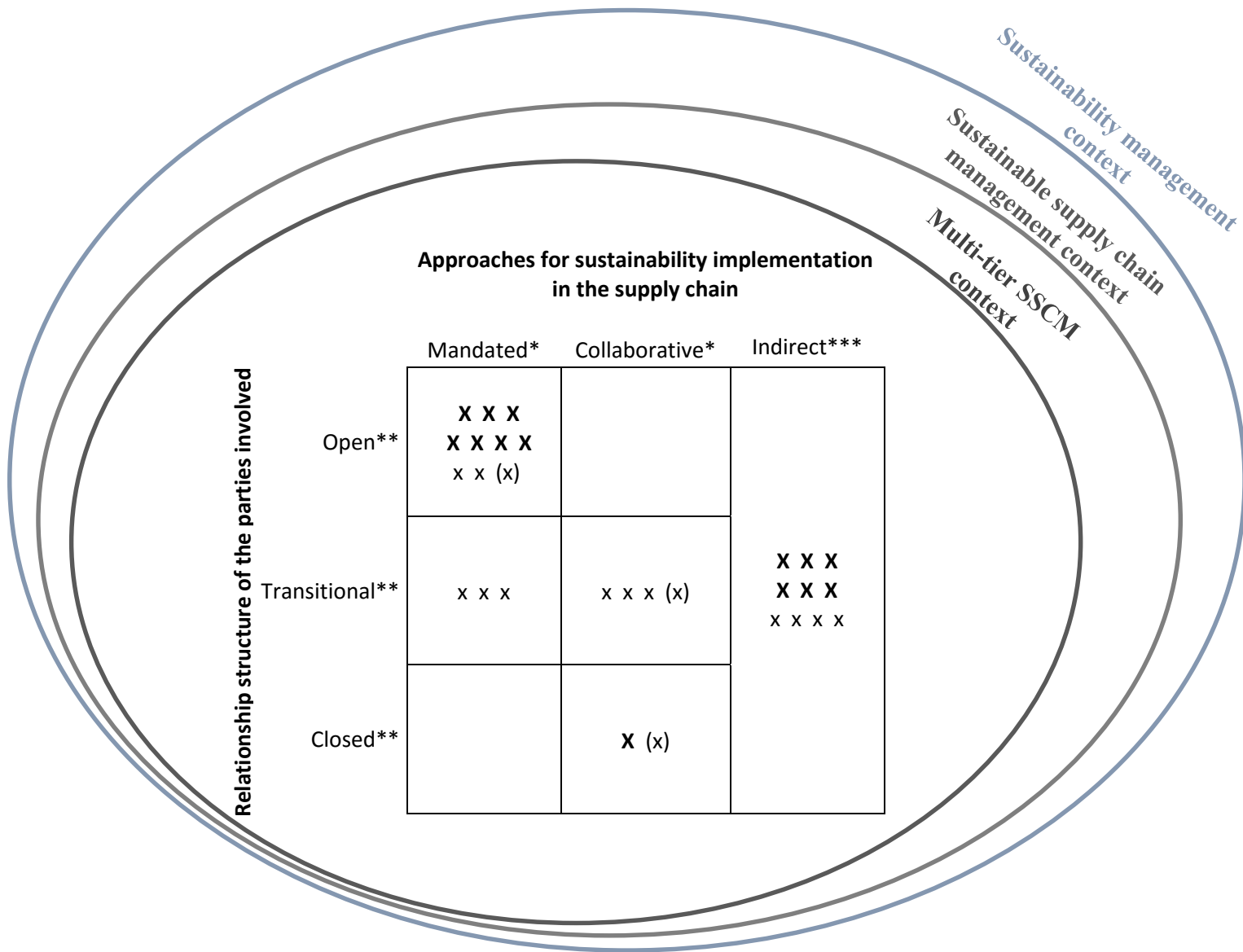
Table 4: Summary of memberships in certain NGOs

Furthermore, some still more indirect ways of sustainability implementation to supply chain appeared from the empirical research. Firstly, to raise general awareness to influence consumers and to impact competitors and secondly to intend to influence the future legislation. The first might happen simply through showing a good example, communicating actively and aiming to impact competitor companies to also start their own sustainability progresses. The second on the other hand might prove extremely effective if successful as legislation determines largely the work done in the food industry. The Finnish standards in food industry's sustainability are higher due to the high legislative demand than in even other European countries (Cb, personal communication, 21.09.2016). According to an interviewee, the interaction with the regulatory parties can serve to influence the details of a new law coming up or to try to predict the future demands and adapt to those earlier one (Karita, personal communication, 2016). The amount of initiatives from EU was mentioned to be high as there is "*constantly something new coming up*" (Leo, personal communication, 2016). It is expectable that some of the new laws will touch upon SSCM as laws for example in the US and UK are demanding companies at different industries for increased transparency and sustainability actions on their supply chains. (California state government, 2010; United Kingdom government, 2015).

4.5 Adapted framework

From analysing the data, it became quite soon clear that the sustainability implementation into the supply chain cannot be analysed only within the first and second tiers of suppliers, but the perspective should be broadened to cover also the indirect management of supply chain's sustainability. This approach included collaboration with direct supply chain external parties and from its themes and methods reminded largely the last categorization of Akhavan and Beckmann's (2016) study on the sustainable supply chain management practices. The name of their category is "*external governance, inter-organizational collaboration and collective initiatives*" (Akhavan & Beckmann, 2016, 4). Their idea was followed in the contents of the indirect approach category. The adapted framework of this thesis is presented in the figure 3 below.

In the adapted framework below, also the individual findings of mandated and collaborative approaches are presented as also shown previously. Here, the same scale is followed, where (x) represents a small, x a medium and **X** a large importance in the findings. Here the specific relationship structure used in both of the approaches can also be easily noticed. The mandated approach is most often used in the open loop structure while the collaborative approach is adapted with closed loop or transitional relations structure in the supply chain. Furthermore, from comparing these approaches it can be estimated that the mandated approach is clearly the most used by the companies, after of which the indirect approach. The collaborative approach also received some findings, but was clearly the least common approach used as such.



* adapted from Brockhaus et al. (2013)
 ** adapted from Mena et al. (2013)
 *** adapted from Akhavan and Beckmann (2016)

Figure 3: Adapted theoretical framework of this study

4.6 Summary of findings

The short conclusion of the findings of this research is gathered in the following points.

Firstly, the understanding of sustainable multi-tier supply chain management should be seen in the larger context deriving from the company internal sustainability management. The successful implementation of sustainability management and sustainable supply chain management are prerequisite for moving on to the multi-tier context in SSCM. It is important to carefully define the prioritization strategy and processes and tools for SSCM.

Secondly, the findings indicated that the mandated approach for sustainability implementation is more commonly adapted than the collaborative one, as was expected by the literature. These mandated methods are mainly implemented via the traditional route, being through the first tier suppliers by giving them a mediating role in the open loop supply chain structure. The more the company reached itself to its second tier suppliers, the more collaborative the approach of implementation seemed to get. This was supported by a notion that there were no formal contracts with the second tier suppliers making the mandated approach more or less impossible.

Thirdly, although companies were using the mandated approaches, these were done sometimes with very collaborative ways. This indicates that through some collaborative aspects in the implementation, the buy-in from suppliers is more likely to be acquired. This also supports the findings of Brockhaus et al. (2013) stating that collaborative initiatives are more likely to succeed. On the other hand, all collaborative approaches existed rarely. This approach was adapted in closed loop structures when it enhanced mutual benefits and in situations when sub-supplier training was necessary.

Last but not least, the findings of this research result in extending the SSCM framework with a third approach for sustainability implementation to supply chain. The indirect approach is suggested, where cooperation is made with supply chain external parties, such as NGOs and industrial organizations. Within the indirect method, there exist possibilities for companies to profitably improve the sustainability of their deep supply chain without being directly in contact with the suppliers. Companies can benefit from combining forces to influence the whole industry to increase sustainability of their deep supply chain.

5. Conclusion

This thesis researched sustainable supply chain management from a relatively new perspective of sustainability implementation to multi-tier supply chains. The literature review discussed the different contexts relating to this research. The literature review finished with a presentation of the theoretical framework assembled to answer the research question of this study, which was: How can sustainability be managed in a multi-tier supply chain. A qualitative case study analyses was performed for data gathered from 10 interviews in three different companies and supported by archival materials. The results of the analyses were presented in the findings chapter, resulting in an extended framework and several contributions to research on this still quite little investigated topic.

This final chapter of my thesis summarizes the findings relating to firstly theoretical and secondly managerial implications of this research. This is followed by a discussion of the findings in a broader context. At the end of this chapter, the limitation of this research are analysed and suggestions for further research made.

5.1 Theoretical implications

The major theoretical implications are briefly summarized here, while they are presented more in detail in the previous chapters. The theoretical implications of this study are relevant for the research from many perspectives. Firstly, this research showed that a company's sustainability implementation approaches differ between their different tiers of suppliers and prioritization areas. Mandated approach for sustainability implementation to supply chain is dominating, where it is common to allow the first tier of suppliers a mediating role. A further finding is that the mandated implementation approaches can also benefit from increase of collaboration in implementation. Secondly, theoretical implication is showing that the more traditional supply chain management methods do not seem to be enough on what it comes to the sustainability implementation into further than the first tier suppliers. Here, the companies were also often mentioning the collaboration with multiple parties to indirectly influence the sustainability in their deep supply chains and to collectively change the

industry's way of working. Hence, the indirect approach is suggested, which implicates that new, unconventional methods of supply chain management are possible when influencing the sustainability in a multi-tier supply chain.

This research also contributed to theory by combining two different bases of theoretical discussions, being firstly the CSR and ethical business research and additionally the supply chain and logistics research. This research showed that it is relevant to make studies in this way of linking the two discussions. After all, the interviewed persons were both from CR management and purchasing functions. Especially in the indirect approach methods, the companies have an integrated way of approaching the sustainable supply chain management, and so it is suggested for the researchers to have as well.

5.2 Managerial implications

On the other hand, the findings of my research are relevant for companies by providing information and examples for them to answer to the growing demand for improved sustainability in multi-tier supply chain. My findings indicated that the sustainability issues in multi-tier supply chains are not currently systematically on the agenda in the frequent meetings with suppliers although they appear in the discussions still quite frequently (Jere, personal communication, 2016). It seems, that the sustainability issues are pressed in the supplier selection process whereas for existing suppliers the sustainability implementation and influencing is not in an equally important role. Especially with older supplier relations, a lot seems to be based on the mutual trust among each other's as well as on trusting that the supplier is following the industry standards and obeying regulation. (Jere, personal communication, 2016). It would be relevant for companies to start making their SSCM initiatives more systemic also in influencing existing suppliers. Influencing on suppliers' sustainability could be a regular part of the supplier negotiations – also in the dominating mandated way of SSCM implementation. This is followed by the second suggestion for supply chain managers, being that the mandated way of implementation could be executed in a more collaborative way. This could be implemented without losing the generalizability

of the mandated implementation approach, but with decreasing the possibilities for change resistance which would benefit the fast and efficient implementation.

Furthermore, the key for the companies is to know where to focus. Today, the deep supply chains grow extensively large and few are the companies that possessing the resources to manage all of the suppliers within the different tiers of their supply chain. An important notion is that companies do not have to tackle the challenge alone. Companies have found it useful to collaborate with non-traditional partners such as competitors and NGO's to chase common objectives and gain power to influence. The pros and cons of media attention at large should not be underestimated. Good communications would be the starting point from where to easily benefit from the work done already. Currently, all of the case companies mentioned at some point in the interviews that actually they are doing a lot for sustainability, but just not necessarily communicating about it to the same extent. Companies would have much more to communicate, and benefit from at the moment and they do recognize it themselves too.

5.3 Discussion of the main findings

The safety and quality of food is extremely relevant for companies in the food industry. This can only be guaranteed, if all the parties in the food chain respect the common principles. The work towards this has been done for a long time already, although only more recently it has been changing under the term of sustainable supply chain management. The concept itself means much more than food safety, and extend to almost all of the industries. Handfield et al. (2005) state that the overall knowledge of the environmental risks has risen within the managers to a level that the managers understand that the environmental risks are large in size and relevancy in almost all companies' supply chains. Industrial differences do exist and especially the industries directly linked to consumers are facing larger demands for changes.

There anyhow lie the severest contradictions that this case study faced. The retailer, being closest to the consumer in daily contact, although facing the pressure to implement sustainable multi-tier supply chain management, would in many cases be incapable to answer to the large demand as simply their suppliers are too numerous due to the nature of the retail industry. The other two companies were also facing demand from their consumers due to being large operators in their field and generally known for sustainable practices. A possibility exists, that the smaller producers would never face the same demand for increased sustainability and transparency from their own customers - nor possibly from anywhere else.

Therefore, I would conclude that the consumers should not be the only ones trusted with the role of demanding for increased sustainability performance from companies through their purchases. Instead, the companies and industrial organizations should push the sustainability practices forward. The findings of my research also suggest that this appear both through increased SSCM demand from downstream supply chain members but also largely due to NGOs, competitors, media and authorities raising up the issues on the agendas of the companies for implementation. If the state of sustainability within an industry rises, then it is more likely to become a norm that also the smaller companies would adapt to. This is where especially the indirect approach for SSCM seeks to influence.

Although, the indirect approach can have a role in improving the sustainability of supply chain, it is still far less common than the more traditional, mandated approach. As the findings of this research showed, the mandating approach is the dominating one and most often implemented in the open loop relationship structure. This seems natural as the companies impact their own first tier suppliers first through the terms in their contracts and product specifications. Giving the suppliers a mediating role in the SSCM implementation saves the company resources. This implementation style is easier to use and is supported by law. Also Matti Kalervo, the Head of CR at Kesko said in an event (Kesko, 2014) that the principle rule in the food industry is that every operator should know its supply chain one step up and down – meaning that in this way the whole chain would be covered. In relation to this, if every tier of the suppliers would have the same values and goals, the buyer companies would not need to worry about the sustainability of their long supply chain. This

also relates to the discussion of should sustainable *multi-tier* supply chain management be on the agenda of the companies at all. As my research question was *how* can sustainability be managed in multi-tier supply chains, I was not aiming to take part in the discussion of whether or not it should even be managed and by whom.

Nevertheless, according to the findings, the case companies were engaged in sustainability related multi-tier supply chain management. They had multiple reasons for it, such as to guarantee the food safety, the quality of the raw material, the availability of it or the ethicality of production. These were reasons not necessarily required by law, and therefore also corresponding to the definition of CSR being voluntary and going beyond law requirements. Although the law would not be forcing the companies for multi-tier SSCM, the ethical perspective might require that especially in the eyes of the company's stakeholders. Often it is stated that a company should be held responsible for all the tiers of suppliers where it has an important impact. It appeared that for the case companies, trusting the mediating role for the middle hand suppliers was not always enough, but the transitional and even closed relationship structures were applied and direct interaction was chased for with also further than first tier suppliers. In these cases, the SSCM approach was turning from the mandated to more collaborative one naturally to guarantee the successful sustainability implementation in the multi-tier context.

5.4 Limitations and suggestions for further research

The limitations of this research on relation to its methods have been analysed in the methods chapter together with the ways of mitigating those risks. Additional limitations of this research relate to the amount of resources available which was forcing the number of the companies to be relatively small. As further research is extremely relevant in the field, I would suggest that researchers with better resources could make a larger scale or even quantitative study around the same topic. Quantitative study of the same topic would also have been too difficult to conduct within Finnish companies, especially within the comparable ones. Although the scope could have been enlarged to for example European

companies, but then the country specific issues would have been causing difficulties, not to mention the difficulties in getting the contact information and finally the answers from the participants. Therefore, a quantitative study or a case study in a larger scale are my suggestion for further research on the same topic.

In addition, it would also prove useful and interesting to many parts to study about the industrial differences in SSCM, as those are known to exist but need more research. I was actually in the beginning of this research project contacting manufacturing industries finding out that there is not yet enough of transparency so that the companies would be willing to discuss these issues on a public research. As the topic is quickly evolving, this is an industry that could soon be re-contacted as their sustainability impact can be considerable. In addition, studies on a larger scale could also be made to compare the country of origin and industrial differences in multi-tier SSCM.

Furthermore, I hope that sustainable multi-tier supply chain management as a topic will receive a large research interest in the near future. When thoroughly researched from many perspectives and contexts, more efficient practices for the use of companies and organizations are expected to develop, and aim at increasing the sustainability of global supply chains at large. This could result in decreased child labour and human rights abuses, improved protection of the natural environment and improved resource efficiency to fight global warming to name a few. Furthermore, increased research interest would also influence the sustainability practices in an *indirect* way on a larger scale, and is already therefore welcomed.

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