LAPPEENRANTA-LAHTI UNIVERSITY OF TECHNOLOGY LUT
LUT School of Business and Management
Business Administration
Master's Programme in Supply Management

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SUPPLIER DEVELOPMENT IN SUSTAINABLE FOOD SUPPLY CHAINS

Master’s Thesis, 2019

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ABSTRACT

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Title:	Supplier Development in Sustainable Supply Chains
Faculty:	School of Business and Management
Master's Programme:	Supply Management
Year:	2019
Master's Thesis:	Lappeenranta-Lahti University of Technology LUT
	72 Pages, 8 Figures, 7 Tables, 1 Appendix
Examiners:	Professor Katrina Lintukangas
	Professor Anni-Kaisa Kähkönen
Keywords:	Supplier development, sustainability, sustainable supplier development, food industry

The objective of this study is to examine how supplier development can be utilized to improve food supply chain sustainability. The study aims to recognize enablers and barriers of supplier development adoption, as well as the used supplier development practices. Also, the study pursues to understand why supplier development is important in the food industry. The study is conducted by using qualitative multiple case study method, and a total of six food supply chain professionals were interviewed from Finnish food industry. The results indicate that supplier development has a positive impact on food supply chain sustainability, and it was considered to be an important tool to respond to the sustainability pressures. Furthermore, a variety of supplier development practices were identified, such as supplier audits, communication and feedback, on-site visits and development projects. Also, the findings revealed that collaboration, commitment to the partnerships, mutual benefits and goals, as well as openness and transparency enable supplier development adoption, while the lack of both resources and understanding of strategic sourcing were identified as a barrier. Finnish food companies can improve supply chain sustainability by collaborating and building trusting partnerships with their suppliers and identifying enablers and barriers as well as best practices of supplier development.

TIIVISTELMÄ

Tekijä:	Katariina Flinkman
Otsikko:	Toimittajan kehittäminen vastuullisissa toimitusketjuissa
Tiedekunta:	School of Business and Management
Pääaine:	Hankintojen johtaminen
Vuosi:	2019
Pro gradu -tutkielma:	Lappeenrannan-Lahden teknillinen yliopisto LUT
	72 sivua, 8 kuvaa, 7 taulukkoa ja 1 liite
Tarkastajat:	Professori Katrina Lintukangas
	Professori Anni-Kaisa Kähkönen
Avainsanat:	Toimittajan kehittäminen, vastuullisuus, vastuullinen toimittajan kehittäminen, elintarviketeollisuus

Tämän Pro gradu -tutkielman tarkoitus on selvittää, kuinka toimittajan kehittämistä voidaan hyödyntää elintarvikealan toimitusketjujen vastuullisuuden parantamiseksi. Tutkimus pyrkii tunnistamaan toimittajan kehittämisen mahdollistavia ja estäviä tekijöitä, sekä hyödynnettyjä käytänteitä. Lisäksi tarkoituksena on ymmärtää, miksi toimittajan kehittäminen on tärkeää elintarviketeollisuudessa. Tutkimus on toteutettu laadullisena monitapaustutkimuksena, ja yhteensä kuutta elintarvikealan toimitusketjun ammattilaista haastateltiin suomalaisesta elintarviketeollisuudesta. Tutkimuksen tulokset osoittavat, että toimittajan kehittämisellä on positiivinen vaikutus elintarvikkeiden toimitusketjujen vastuullisuuteen. Lisäksi tutkimuksessa tunnistettiin useita toimittajien kehittämiskäytänteitä, kuten toimittajan auditoinnit, kommunikointi ja palautteenanto, paikalla vierailu sekä kehityshankkeet. Tulokset osoittavat myös, että yhteistyö, sitoutuminen kumppanuuteen, molemminpuoliset hyödyt ja tavoitteet sekä avoimuus ja läpinäkyvyys mahdollistavat toimittajan kehittämisen omaksumisen, kun taas resurssien ja strategisen hankinnan ymmärryksen puute estävät sen. Suomalaiset elintarvikealan yritykset voivat parantaa toimitusketjujen vastuullisuutta tekemällä tiivistä yhteistyötä toimittajien kanssa ja rakentamalla luottamuksellisia kumppanuussuhteita sekä tunnistamalla toimittajan kehittämisen mahdollistavat ja estävät tekijät sekä parhaat käytännöt.

ACKNOWLEDGEMENTS

My journey as a LUT University student is close to graduation. This thesis project has taught me a lot and it is rewarding to write these last words. However, it also means the end of one chapter of my life. I am grateful for all the unforgettable memories created during these years in Lappeenranta, as well as friends who will share those memories with me even after the graduation.

I would like to thank all the interviewees for sharing their valuable thoughts and expertise. Without their participation, the research would not have been possible. I would also like to thank my supervisor Katrina Lintukangas for providing me guidance and precious feedback during the whole thesis process. Also, thanks for my friends who have listened my thesis updates and provided peer support.

Finally, I want to thank my family and loved ones for their support through my studies. I want to express my deepest gratitude for my Mom - thank you for your help whenever I needed it and for your continuous encouragement.

In Lappeenranta, December 16th 2019

Katariina Flinkman

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1. INTRODUCTION

Many food companies around the world have faced huge external pressure regarding sustainability and the Finnish food industry is no exception. Global and common challenges in this sector, such as climate change, population growth and global warming, have been actual themes in the worldwide discussion in the recent years and it is evident that these themes will be even more critical as the time goes by. In addition, consumers' awareness towards sustainability has increased and they are more and more conscious about the origin of the food products, not to mention ever more complex and broad supply chains in the food industry. All these mentioned factors have forced food companies to take deepen overview to their whole supply chain as well as develop their supply strategies to ensure the sustainability and safety of their products while maintaining competitiveness (Mota et al. 2015). To respond to the external pressure created by stakeholders and customers as well as prove commitment to sustainability, companies have implemented different sustainability related programs, reports and guidelines (Hassini, Surti and Searcy, 2012).

According to Crane, Matten and Spence (2008), all industries, markets and business types nowadays face growing demand for sustainability actions, and especially food industry is under the loop to implement more sustainable and responsible practices. To respond to the customers and other stakeholders' demand, supply chains and their management is essential. However, managing supply chains in food industry is exceptional compared to other industries due to the strict requirements of food safety and quality. (Zecca and Rastorgueva, 2014) Furthermore, Krause, Vachon and Klassen (2009) stated that company can't be more sustainable than its supply chain. The focus of sustainability has previously concentrated only to single facility or organization. Though, nowadays, the focus has extended to cover the whole supply chain and all the actors from raw material suppliers to the end customers of the product. This movement towards more comprehensive perspective has provided broader adoption and development of sustainability. (Linton, Klassen, Jayaraman, 2007)

Sustainability as a trend is also evident in the prior literature and it has been investigated widely in the recent years. Sustainability has been studied from environmental, social and economic perspective, known also as triple bottom line (Kleindorfer et al., 2005; Elkington 1998). However, environmental issues related to sustainable supply chain and its impact to companies' performance have been well studied (e.g. Zhu and Sarkis, 2004; Large and Thomsen, 2011; Bai and Sarkis, 2010) while social aspect has received evidently less attention. This is also noted by authors Leppelt et al. (2013) as well as Yawar and Seuring (2018). Therefore, this study does not limit any of the existing sustainability dimensions but rather aims to combine them to one entity which is under the study and thus, to get a holistic view of the topic. Additionally, sustainable supply chains in the food industry perspective have gained some interest among the scholars (e.g. Li et al. 2014; Murphy and Adair, 2013), but the perspective focuses rather in supply chain management in general than supplier development and related practices in detail.

To achieve the sustainable supply chain, companies need to collaborate with their suppliers and other supply chain members. Bourlakis and Weightman (2004) describe that collaborative food supply chain should be, for example, long-term, information-sharing, trusting and transparent with greater traceability. This kind of collaboration between parties is even more important as companies increasingly outsource their non-core activities to outside service providers which make them even more dependent on their suppliers. This increased outsourcing is mainly due to the companies' aim to focus on their core competences. Additionally, suppliers have more responsibility for the performance of the entire supply chain and therefore, supplier development practices can be utilized to build sustainable supply chain as well as ensure that all suppliers reach the required performance level (Krause, Scannell and Calantone, 2000; Sancha, Longoni and Gimenez, 2015).

Supplier development in general has been examined in the prior literature during the last decades. Prior literature has presented different process models, frameworks and practices for supplier development. For instance, Krause et al. (1998) introduced ten-step supplier development process model and Khan and Nicholson (2014) examined supplier development programs and based on that, introduced three-stage supplier

development process including qualification, evaluation and interactive stages. Besides, Wagner (2006a) studied views of supplier development practices and how they are applied. Even though supplier development has been studied a lot independently, there are also some researches that link supplier development to a sustainability perspective. The implementation of sustainable supplier development practices and their impact on supply chain's sustainability performance have been studied from different sustainability dimension viewpoints (Gimenz et al. 2012; Vachon and Klassen, 2006). These prior studies argue that especially collaborative practices within the supply chain (Gimenz et al. 2012) as well as technical support and trainings (Bai and Sarkis, 2010) has a positive impact on the sustainability performance.

In addition, Sancha et al. (2015) examined drivers and enablers of sustainable supplier development practices and they suggested that companies are driven to use sustainable supplier development for competitive reasons and the main enabler is firm's specific capabilities. Also, Large and Thomsen (2011) studied potential drivers and practices, but again, the study focused only on environmental perspective of sustainability. Correspondingly, Busse et al. (2016) examined contextual barriers of sustainable supplier development and suggested possible actions to mitigate them in the context of global supply chains. They recognized barriers, such as complexity in the sustainability concept, socio-economic differences and cultural differences, to name a few. Furthermore, sustainable supplier development has been studied in some certain industries, for example, in chemical industry (Leppelt et al. 2013) as well as in dairy industry (Yawar and Seuring, 2018). However, sustainable supplier development in the food industry more broadly is not studied well enough, especially given the exact geographical delimitation

Examining food industry and supply chains in the context of sustainability is vital because food as well as its availability and safety influence everyone. According to European Commission, the food sector is the biggest manufacturing sector which will cause several issues in the coming years. The Commission has mentioned for example malnutrition, water, biodiversity loss and the changes in supply chain towards the most cost beneficial option rather than sustainability as an upcoming issue. (European Commission 2016) In addition to these common issues in the food industry,

many companies are occasionally in the headlines due to the sustainability issues in their supply chains. These social and environmental scandals may harm the business and reputation especially in the food industry as the food safety is one of the most critical factors. Moreover, companies need to be sure about the quality and safety of their products because problems with the food safety can, at worst, cause a danger of life. Due to the above-mentioned sustainability issues and safety concerns, it is important to find solutions to manage global supply chains. This study examines whether supplier development and collaboration between parties could play a key role in improving supply chain sustainability and food safety, and thus contribute to enabling living conditions for future generations.

1.1 Research aim, questions and delimitations

The aim of this study is to examine more deeply how Finnish food companies can utilize supplier development to improve the sustainability of the food supply chain, as well as understand why supplier development is important in the food industry. The study pursues to recognize enablers and correspondingly barriers of the adoption of supplier development practices. Furthermore, the aim of this study is to identify used supplier development practices within the Finnish food companies and understand how these practices can be used to tackle the potential issues related to sustainability dimensions. In addition, the study pursues to investigate how supplier development and sustainability adoption can contribute to the competitive advantage of the food companies.

The aims of this research are pursued by answering to the set research questions. The research questions, both main research question as well as sub-questions are presented below.

The main research question is:

How can companies improve sustainability by supplier development in food supply chains?

The main research question is supported by three sub-questions, which intend to explain the factors behind the main research question in more detail. The sub-questions are:

What kinds of supplier development practices are used to improve sustainability in food supply chains?

Why supplier development is important in the food industry?

What are the enablers and barriers of supplier development adoption?

The empirical part of the research is focusing only on food industry and the geographical area of the research concerns merely Finland. Food industry limitation was chosen as it is the biggest manufacturer of consumer goods in Finland (Finnish Food and Drink Industries' Federation, 2019a) and its impact on society is significant. In addition, this study will not limit any part of the supply chain but rather aims to consider wide range and different sizes of actors from various supply chain levels. However, the concepts of supplier development and sustainability are viewed from the perspective of the buying company and consequently, the supplier's viewpoint is excluded from this study. According to these limitations, empirical data is collected from Finnish food companies. Nevertheless, even though the empirical part concentrates on Finnish food industry, the theoretical part is not limited to a specific industry or country. Hence, the theoretical part presents comprehensive view to the perspectives of sustainability and supplier development which enables this study to utilize widely scientific articles and best practices from several industries.

This study does not limit any of the three dimensions of sustainability but focus on social, environmental and economic perspectives. The limitation to a certain dimension was left out in order to get a comprehensive picture of the food supply chain

sustainability through interviews from different companies in the food industry. Moreover, this study is limited to focus on focal company's current supply base. The study examines existing suppliers and supplier development actions towards these suppliers and thus, new supplier selection as well as search for new potential suppliers are excluded from the study.

Due to the limited time and space, there are only limited number of company interviews. Nevertheless, this study is relevant within the limited research area, but it is difficult to make generalizations or integrate the results directly into other industries, especially given the specificity of food industry. Even the research is limited to Finnish food industry, there will not be any limitations regarding the global or local nature of the supply chain.

1.2 Conceptual framework and key definitions

Conceptual framework of this study aims to describe the theoretical perspectives and their linkage to the topic, as well as the most important key concepts and their relationships. The aim of this study, as the research questions show, is to examine how companies can utilize supplier development to improve sustainability of food supply chain and why supplier development is so important in the food industry. Therefore, key concepts of sustainability as well as supplier development and practices are examined more closely to understand their impact to the sustainability of food supply chain and further, to the competitive advantage. In addition, external stakeholder pressure is one of the drivers for this study, as the concept is considered one of the main reasons why companies pursue towards sustainability (Foerstl et al. 2015). The research context concentrates on Finnish food industry and the perspective of the study is focal company's perspective. The conceptual framework is presented in the figure 1 below.

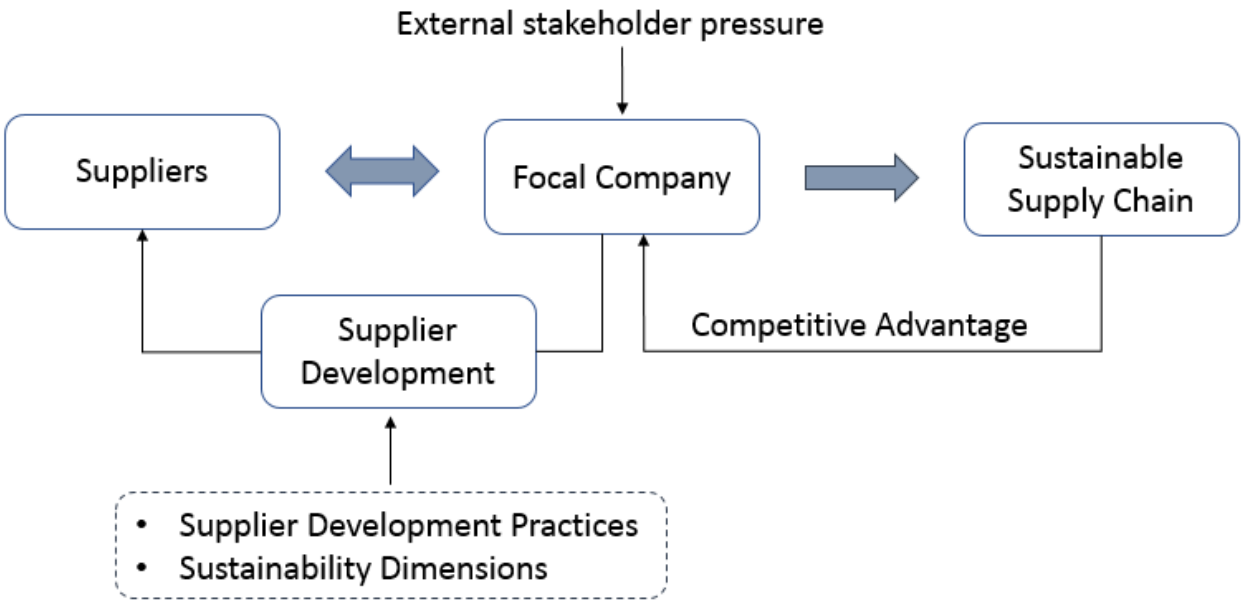

Figure 1. Conceptual Framework

To explain the conceptual framework more inclusive and before exploring relevant theories and earlier literature more deeply, some of the key definitions of this study are presented shortly. The main concepts and themes concentrated in this study are sustainability and supplier development. Additionally, there are several concepts related to these two main themes that will be discussed more closely in the later theory chapters.

Sustainability

A widely adopted and used definition of sustainability was presented by World Commission on Environment and Development, reported 1987. The Commission suggested following definition: “Development that meets the needs of the present without compromising the ability of future generations to meet their needs”. This definition by WCED encompasses all dimensions of sustainability, including social, environmental and economic views.

Supplier development and Sustainable supplier development

Supplier development can be defined as any action from buying company to develop supplier capabilities and/ or performance to meet the buyer’s needs either in the short-

term or long-term, or both. The aim is to identify, measure and improve supplier performance as well as advance continues improvement so that supplier is capable to deliver required quality of products and services to the buying company. (Krause et al. 1998; Krause and Ellram, 1997) On the other hand, sustainable supplier development refers to any development and improvement actions from the buying company which pursue to achieve economic goals, environmental goals and socio-ethical goals. (Busse et al. 2016; Sancha et al. 2015)

External stakeholder pressure

External stakeholder pressure can be defined as a focal company's accountability for its actions and decisions to external stakeholders, such as competitors, non-governmental organizations, regulators, business partners and customers. (Wolf, 2014; Tian et al. 2015)

1.3 Research methodology and data collection

The empirical part of this thesis is conducted by using qualitative research method, more precisely a case study. The qualitative method was chosen as the aim of this study is to get in-depth understanding about the research matter as well as recognize the meaning and relationship between sustainability and supplier development in Finnish food industry. (Saunders et al. 2016) A case study is one of the most used research methods in business economics and the purpose of the method is to examine one or more intentionally selected cases, such as company, department or process. (Koskinen et al. 2005, 154) According to Yin (2014), a case study is preferred research method when the types of research questions are "how" and "why", and when the study aims to explain more precisely the present complex phenomena as well as desire to understand the holistic and real-world perspective.

A case study should rely on multiple sources of data in order to cover the complexity and context of the case (Yin, 2014). Considering this and to analyze the relationship between sustainability and supplier development, this study relies on data collected from several different food companies. The primary data is collected through six theme interviews from Finnish food companies. This interview type was chosen as a research

method due to its flexibility and the nature of the research questions. In addition, the opportunity to ask more specific and detailed questions from the interviewees during the interview process (Hirsjärvi and Hurme, 2001, 34-35) as well as possibilities to lead the discussion without controlling it supported the choice of theme interview. (Koskinen et al. 2005, 105)

1.4 Structure of the study

This study consists of six main chapters and sub-chapters. The structure of the thesis is presented in the figure 2 below. The first chapter introduced the reader to the topic by presenting earlier literature and background of the study. Additionally, first chapter provided the research questions, objectives, limitations, key definitions, conceptual framework and research methodology which are essential to the research. The second and third main chapters concentrate on the theoretical perspectives of the study. In the second chapter the concept of sustainability is examined generally as well as in the supply chain context considering all the sustainability dimensions. The third and final theoretical chapter focus on the theory of supplier development. The aim is to understand the concept generally and from the sustainability perspective as well as identify supplier development practices and process recognized in the prior literature. Also, the benefits and barriers of supplier development are discussed briefly.

The empirical part of the study is explored in the main chapters four and five. Research methodology, research process and data collection as well as Finnish food industry as a research context are described more closely in the main chapter four. Then the study proceeds to the main chapter five which consists of the analysis and results of food company interviews. By examining the collected data, the chapter aims to understand how supplier development and development practices could be used in order to improve supply chain sustainability. The sixth and final main chapter strives to answer to the set research questions and summarize the main empirical findings of the study. Also, theoretical and managerial implications are discussed. Finally, the limitations of the study will be presented with the suggestions for future research.

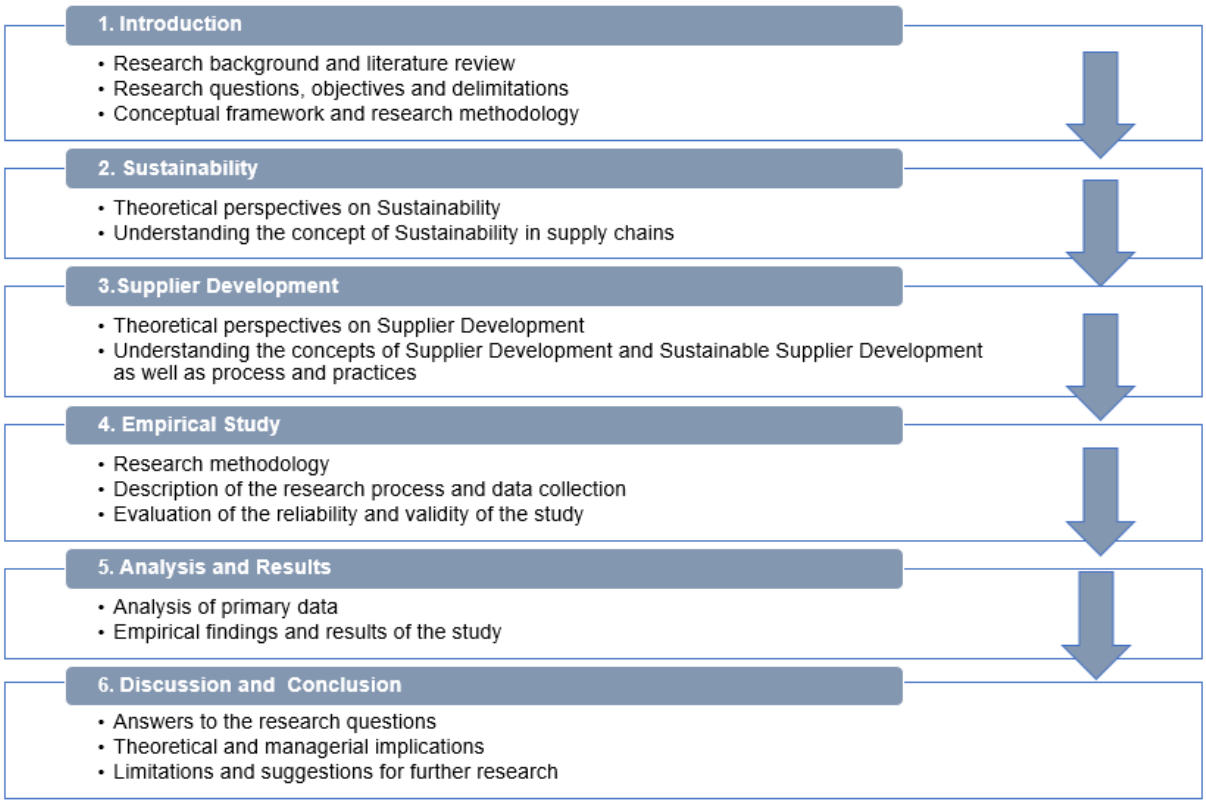

Figure 2. Structure of the thesis

2. SUSTAINABILITY IN SUPPLY CHAINS

Sustainability as a trend has also extend to supply chains and many companies have understood the importance of suppliers in terms of sustainability. Focal companies, suppliers and customers are all connected to each other by information, material and capital flows. It can be stated, that social and environmental issues and questions appears during all the phases of production as well as different supply chain's levels, and often, focal companies of the supply chain are found responsible for possible sustainability problems. (Seuring and Muller, 2008) In addition, the globalization has expanded supply chains even longer and nowadays, companies are sourcing products also from developing countries, which causes its own sustainability questions that need to be considered (Okongwu, Morimoto and Lauras, 2013). Consequently, the sustainability performance of the whole supply chain has become increasingly important and focal companies can no longer focus solely on their own sustainability actions.

Companies are forced to take account sustainability issues in their operations as both internal and external stakeholders increasingly require the consideration of environmental and social aspects along with the economic aspect (Carter and Easton, 2011). According to Flint and Golicic (2009), sustainability is even more important in supply chains especially in the industries which are highly competitive, such as food industry. Thus, companies aim to leverage sustainability related competencies to create competitive advantages. Additionally, Flint and Golicic (2009) suggest that sustainability actions are not just "right thing to do" but it can also improve the competitive advantage of the company and supply chain, while Wheeler and Elkington (2001) argues that sustainability adoption can create real value for the company's stakeholders.

This chapter firstly focuses on sustainability as a concept and present more deepen definition considering all the sustainability dimensions. Additionally, this chapter covers sustainability in supply chains generally as well as discusses how sustainability is reflected in food industry and food supply chains. Also, buyer-supplier relationship,

collaboration and potential competitive advantages in supply chains will be examined from the sustainability perspective.

2.1 Sustainability dimensions

Sustainability has become a global talking point within the 21st century and the sustainability issues are widely recognized by world leaders and scientist, but also among ordinary citizens. However, even the sustainability as a topic is not new, the definition is still somewhat vague. (Adams, 2006) As mentioned in the introduction, the commonly accepted definition of sustainability was declared in 1987 report by the World Commission on Environment and Development, known also as a Brundtland Report. (Kuhlman and Farrington, 2010) The report defined sustainability as: “development that meets the needs of the present without compromising the ability of future generations to meet their needs”. Dyllick and Hockerts (2002, 131) extend the definition of the Brundtland report to apply also in business level and thus, define it as “meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders as well”.

Ahi and Searcy (2013) summarized the definitions of business sustainability and found out that business level sustainability is often closely linked to corporate social responsibility (CSR). Additionally, they suggest that these concepts share many of the same key features, such as economic focus, environmental focus, social focus, stakeholder focus, volunteer focus, resilience focus and long-term focus. Further, Van Marrewijk (2003) even argues that business sustainability and corporate social responsibility can be used as synonyms in the context of corporate. However, this argument has also attracted some objections (Ahi and Searcy, 2013).

Although the sustainability is defined various ways in the history, nowadays the concept is widely seen as an interaction between three dimensions: social, economic and environmental (Carter and Rogers, 2008). The approach for three dimensions, also known as triple bottom line, was firstly presented by Elkington (1998) (Kuhlman and Farrington, 2010). According to Norman and MacDonald (2004), three dimensions

of sustainability stems from the idea that firm's success or health shouldn't be measured only by the traditional economic view but instead, consider also the social and environmental performance. It is essential to understand that in the long run all the three dimensions are needed together in order to achieve sustainability and focusing exclusively on economic sustainability may be successful only in the short term (Dyllick and Hockerts, 2002). In addition, the adoption and interaction of all these sustainability dimensions add real value to the firm's stakeholders as well as support the firm in its market area (Wheeler and Elkington, 2001). The interaction between these three dimensions are presented in the figure 3 below.

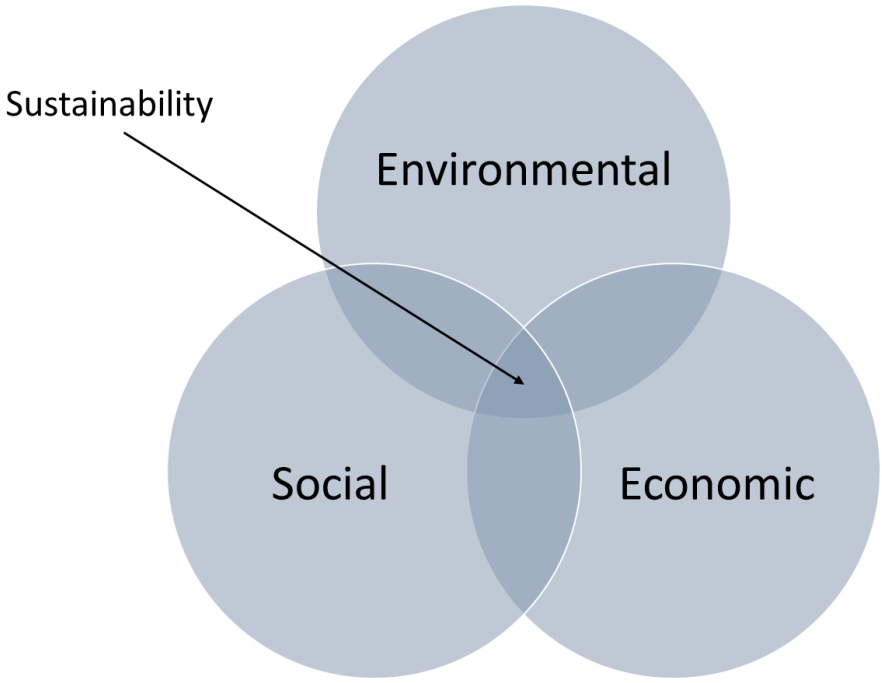

Figure 3. Dimensions of sustainability

The three dimensions of sustainability have also gained some critic. For example, Adams (2006) pointed out that the concept of three dimensions allows trade-offs between social, environmental and economic perspective of sustainability, meaning that a company can compensate issues in one dimension by improving performance in another dimension. This problem related to the compensability and trade-offs has been recognized also by many other scholars (Ayers, 2008; Diez and Neumayer, 2007; Kuhlman and Farrington, 2010) and it is behind the concepts of "weak" and "strong" sustainability. The weak sustainability refers to the sustainability strategy where trade-

offs between dimensions are allowed while strong sustainability restrict such compensability (Adams, 2006).

Environmental sustainability

The environmental dimension of sustainability refers to the impact of an organization on living and non-living natural systems, such as land, air, water and ecosystems. This dimension considers both input impacts as well as output impacts. Input impacts include for example energy and water while output impacts cover emissions, effluents and waste. Besides, biodiversity, transport, and product and service-related impacts, as well as environmental compliance and expenditures are taken into consideration. (GRI, 2013) According to Dyllick and Hockerts (2002, 133), the environmentally sustainable company does not cause emissions that harm the environment and “use only natural resources that are consumed at a rate below natural reproduction or at a rate below the developments of substitutes”.

Social sustainability

The social sustainability refers to the organization’s impact to the internal social systems where it is involved. This dimension includes for example labor practices and decent work conditions, human rights as well as society and product responsibility. (GRI, 2013) Further, according to Mani et al. (2016), social sustainability in the context of supply chain can be defined as management of social issues which have any kind of effect to the safety and well-being of people in the supply chain. These issues include for example equity and safety, philanthropy and labor rights. It is typical for social sustainable companies that they aim to create value for the communities they operate in, and they pursue towards this goal by increasing the human capital of individual partners and advancing the societal capital of these communities (Dyllick and Hockerts, 2002).

Economic sustainability

The economic dimension of sustainability is widely adopted in business and it refers to organization’s impacts on the economic conditions of its stakeholders considering the local, national and global levels of economic systems. On the contrary to common

belief, the economic dimension considers economic sustainability from a much broader perspective than just profitability (Skjott-Larsen et al. 2007) and the goal is to ensure any time cashflows that are enough for liquidity as well as provide above average and constant return for shareholders (Dyllick and Hockerts, 2002). In addition, the economic dimension of sustainability can include, for example, innovation and technology as well as collaboration and knowledge management, and to stay in the market for a long time, companies need to respect the economic sustainability beside the social and environmental dimensions (Baumgartner and Ebner, 2010).

2.2. Sustainable supply chain

According to Asefeso (2015), supply chain sustainability refers to a comprehensive perspective of supply chain processes and technologies, and the focus goes beyond delivery, inventory and traditional views of cost. In addition, the sustainable supply chain pursues to manage supply chain operations, resources, information as well as funds and the main purpose is to maximize the profitability of supply chain while simultaneously minimize the environmental load and maximize the social well-being (Hassini et al. 2012) Likewise, Pagell and Wu (2009, 38) define that sustainable supply chain is “one that performs well on both traditional measures of profit and loss as well as on an expanded conceptualization of performance that includes social and natural dimensions”. Hence, sustainable supply chain not only considers all the sustainability dimensions, but also takes into account the interaction between social, environmental and economic perspective. It is essential to find balance between all these dimensions in order to develop a truly sustainable supply chain. (Seuring and Muller, 2008)

Markman and Krause (2016) suggested two inseparable principles that can be applied as examining sustainability practices in supply chains. Firstly, sustainable practices must advance ecological health, obey ethical standards to achieve social justice and improve economic vitality. Secondly, sustainable practices must prioritize sustainability dimensions in a certain order; (1) environment, (2) social and (3) economic. Similarly, Montabon et al. (2016) presented Economically Dominant logic (illustrated in figure 4) in their study which emphasize the aim to create truly sustainable supply chain instead of decreasing the harm caused by a single focal firm. They also stressed that if trade-

offs are encountered, the priority should be environment, then society and finally the profits. However, even though the previous studies address the order for sustainability dimensions, the reality indicates that companies and supply chain managers prioritize economic interests before social and environmental interests (Montabon et al. 2016). Also, European Commission (2016) has recognized this and argue, that supply chains aim towards most cost beneficial option rather than most sustainable one. This is interesting, as this strategy has been shown to be unsuccessful in the long-run (Dyllick and Hockerts, 2002).

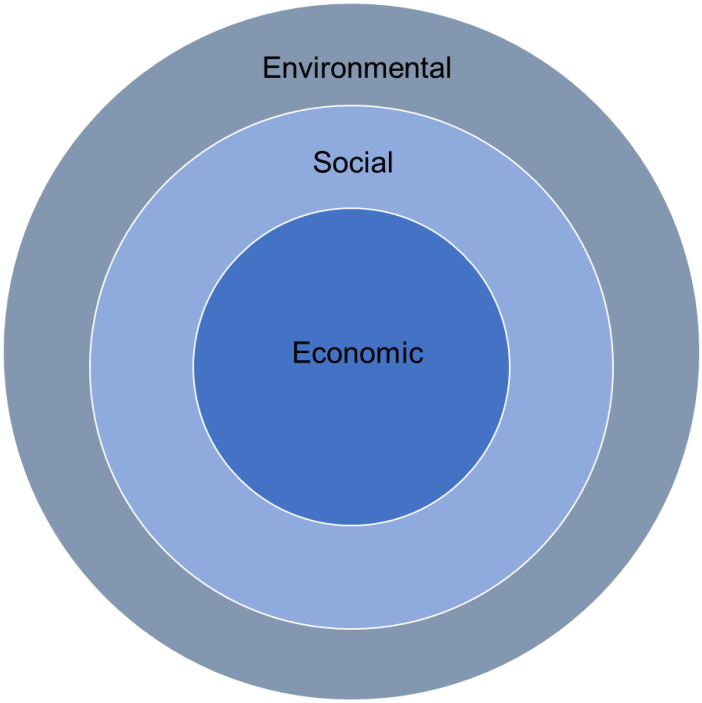

Figure 4. Ecologically Dominant Logic after Montabon et al. (2016)

Pagell and Wu (2009) argue in their study that a truly sustainable supply chain could stay in the business eternally with the consent of the customers. According to the scholars, a truly sustainable supply chain does not do any net harm considering the environmental and social sustainability but still produce profit in the long-term period. However, at least currently, there does not exist such a truly sustainable supply chain. Also, Montabon et al. (2016) agree with the study of Pagell and Wu (2009) and state in their research that nowadays, there are only few if any truly sustainable supply chains and the sustainability rankings tend to focus only on focal firms instead of entire

supply chain. This perspective of sustainability rankings has made it even more difficult to evaluate whether the supply chain is truly sustainable or not. The scholars suggest that supply chains should concentrate more on the question how to become truly sustainable instead of focusing only to reduce environmental and social problems related to sustainability. Likewise, Markman and Krause (2016) propose that the mindset within the companies and supply chains should be shifted from traditional “do-not-harm” perspective to more proactive “do-good” perspective.

Nowadays it is typical that stakeholders and consumers do not differ focal company from its suppliers or supply chains but rather tend to consider that the focal company is responsible for all the actions during the product manufacturing. Therefore, it is even more important to pay attention to the sustainability of whole supply chain as problems or neglects in any tier of supply chain may cause bad reputation as well as affect negatively on customers’ trust towards the company itself. (Grimm, Hofstetter and Sarkis, 2014) As Tate, Ellram and Dooley (2012) pointed out, there are even more companies which understand supplier’s meaning in sustainability initiatives. Considering the environmental sustainability efforts, several companies have recognized the importance of suppliers as well as the significance of supply chain involvement in order to achieve the sustainability.

According to Grimm et al. (2014), food industry as well as its supply chains have a notable impact on the sustainability. Hence, sustainability needs to be considered as a part of the food supply chains due to the high animal and/or plant-based consumer goods as well as complex and labor-intensive nature of the food supply chains (Maloni and Brown, 2006). The typical food supply chain is presented briefly before examining the sustainability in food supply chains more closely.

The food supply chains have developed over time from shorter, independent units to more unified and coherent relationship between the parties. They usually consider different actors from raw material providers to consumers and the product flow towards end-customer can proceed from different paths and via different processes as seen from the figure 5. In some cases, the end consumer might get the food product directly from the producers without any intermediates for example, buying the product directly

from the farm or product stands. However, in other cases the food product may take longer path to the end customer, for example, via manufacturer, distributors and wholesalers. When the food product goes through the wholesalers, it usually refers to grocery and convenience stores. (Bourlakis and Weightman, 2004, 212) On the other hand, food supply chains can also be described by three main sectors which are first agricultural sector, second, food processing sector and third, wholesaler and retail sector (Bukeviciute et al. 2009).

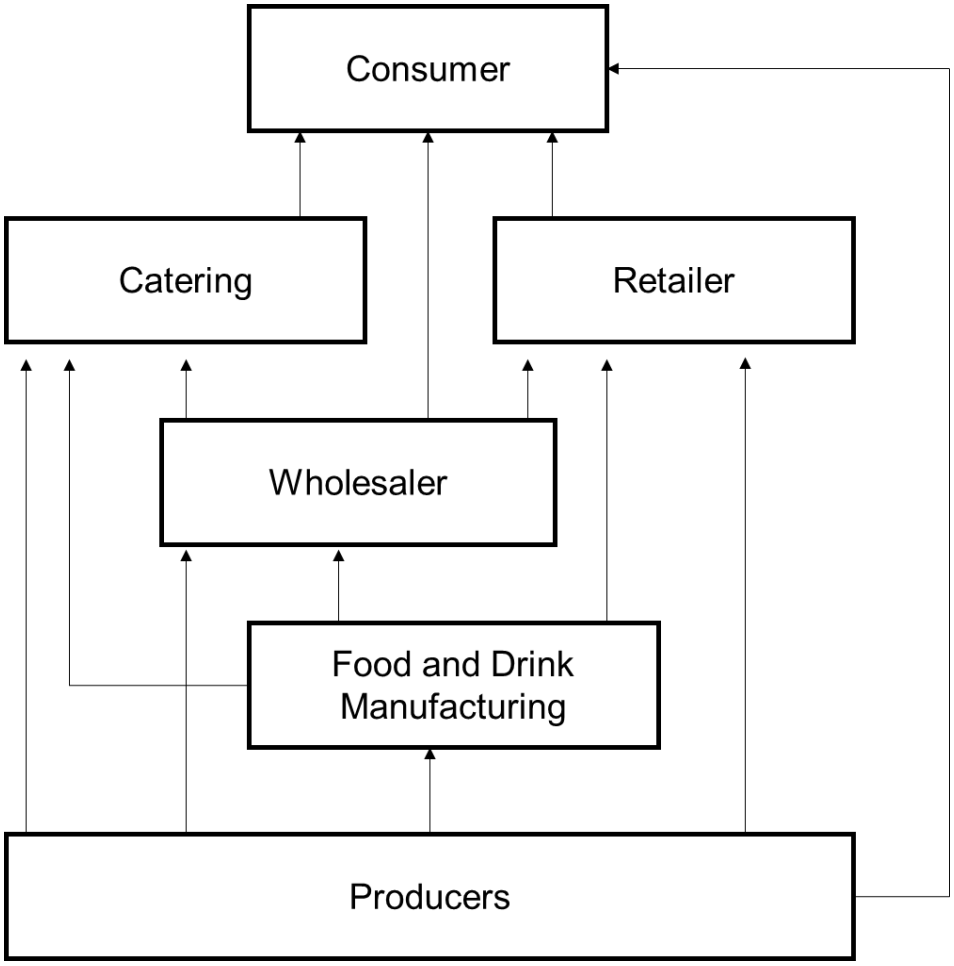

Figure 5. Food supply chain according to Bourlakis and Weightman (2004)

As seen from the figure 5, food supply chains include various actors from different levels of the chain, and they all have an impact to the sustainability dimensions. It is important to consider all the actors within the food supply chain as all of them utilize natural resources, such as water, soil, air and energy as an input. Moreover, due to the production and consumption activities, the food supply chain causes several

sustainability issues in environmental, social and economic dimensions. (Zhu et al. 2017)

According to Maloni and Brown (2006), food industry has several impacts on the environment. Generally, the most significant environmental issues in food supply chains are related to greenhouse gas emission, energy consumption, ecological issues as well as over consumption of natural resources, such as water and land (Zhu et al. 2017). Additionally, food waste and pollution (Kirwan et al. 2017) as well as oceans and decrease of fish stock (Christopher, 2011) are mentioned in the previous studies as an environmental sustainability issues in food supply chains. Most of the issues can be recognized at many stages of the supply chain but there are also some exceptions. For example, the consumption of land and water are evident especially in the agricultural production phase (Zhu et al. 2017). The environmental impact of carbon footprints has risen significantly in food supply chains as the food industry activity has increased due to the massive population growth. These environmental impacts are obvious in all phases of supply chain and therefore, most of the companies have taken actions to reduce these impacts. However, even the companies are more aware of the energy and efficiency in the food production and packing, they should also consider the environmental impacts of transportation along the supply chain. This stage of supply chain has become even more important from the sustainability perspective as supply chains are getting more longer and global. (Jones, 2002)

When comparing the social issues of food supply chain with the general supply chain, there are clear differences between them. According to Brandenburg et al. (2014), social issues of general supply chains are related to labor standards, such as wages, employees or employment gender ratios as well as social acceptance and contribution to employment, population growth or customer needs and requirements. These mentioned aspects are also related to food supply chains, but additionally, food safety, animal welfare, fairness, food donation as well as employment and trainings are typical social sustainability issues for food supply chains. Especially food safety issues have gained a lot attention in the studies related to sustainable food supply chains. (Zhu et al. 2017) To prevent these safety issues, such as foodborne diseases, in food supply chain, many authors have suggested the implementation of safety and quality controls

(e.g. van Der Gaag et al. 2004; Chen, Zhang and Delaurentis, 2014). Another typical social issues in food industry are related to labor and human rights. For example, low wages, working conditions and hours are critical issues in the food industry, not to mention child workers as well as bonded and slave labor. Furthermore, food companies have pursued to reduce costs at the expense of animal welfare, which is also one of the social issues in food supply chains. (Mani and Brown, 2006) Interestingly, there is still a lack of research about social issues in the food supply chains even though the matter has gained a lot of public attention (Zhu et al. 2017).

According to the study of Zhu et al. (2017), economic issues are usually connected to social and environmental issues, such as profitability, quality, pricing, consumer preferences, cost optimization as well as income management. These interfaces between economic, social and environmental issues can be described also as eco-efficiency issues, socio-economic issues as well as socio-environmental issues (Brandenburg, 2014). The issues related to all sustainability dimensions are recognized in food industry and thus, the food companies are pursuing to innovate alternative solutions to reduce the environmental burden and solve social and ethical issues created by food supply chains. These innovations include, for example, different production, marketing, labeling, accreditation schemes and initiatives. (Ilbery and Maye, 2007; Yakovleva, Sarkis and Sloan, 2012)

2.3 Collaborating with suppliers for sustainable supply chain

Sustainable supply chain can’t be achieved without trust between buyer and supplier. Many companies pursue towards sustainable supply chains only through monitoring policies and by controlling suppliers which have not produced the desired outcome about sustainable supply chains. Instead, shared sustainability values and collaboration between the parties as well as mutual goals have been seen to produce more profitable and valuable relationship and further, such collaboration can advance the sustainability of supply chain. Hence, partnerships between focal company and suppliers to achieve sustainable supply chain can offer competitive advantage which appears within their own operations. (Apte and Sheth, 2017)

Several studies have understood the importance of collaboration between partners in order to achieve the sustainability in supply chain and additionally, many authors have examined buyer-supplier relationships in the context of developing sustainable supply chain. (Kumar and Rahman, 2016). Gold, Seuring and Beske (2012) found in their study that collaboration within the supply chain is crucial when the aim is to achieve social, environmental and economic sustainability throughout the whole product life cycle. The collaboration within the supply chain can create inter-firm resources and capabilities which are difficult to imitate as they are socially complex, causally ambiguous and historically grown. Consequently, the resources and capabilities generated by collaboration can bring competitive advantage for the companies as well as the whole supply chain. Likewise, Carter and Rogers (2008) emphasize that valuable, rare and difficult to imitate resources, such as learning and knowledge, are created while buyers and suppliers collaborate and aim to advance their social and environmental performance.

Also, Paulraj (2011) has recognized the importance of unique resources and capabilities considering the sustainability in supply chains but according to them, companies should not only focus on achieving these resources and capabilities but additionally, pursue to leverage them. Companies should utilize them to identify strategic partners, collaboratively manage them and finally, evaluate them to meet future sustainability goals and requirements. If the company succeeds in this, it is possible to benefit of the future markets, build better societal relationships and, most importantly, improve social position and reputation.

Gimenez et al. (2012) have studied sustainable supply chains from two different perspective which are supply chain assessment and supply chain collaboration. According to the findings of their research, supply chain collaboration has a statistically significant impact on environmental, social and economic sustainability dimensions. Also, Vachon and Klassen (2008) agree with this finding by stating that collaboration with primary suppliers and customers has a remarkable positive impact on manufacturing as well as environmental performance, while Zhu and Sarkis (2004) found a positive link between collaboration and both, environmental as well as economic sustainability performance. On the contrary, supply chain assessment does

not seem to have positive impact on the sustainability dimensions, which is mainly due to the fact that operationally essential and critical resources are created only through the collaboration. (Gimenez et al. 2012) However, supplier assessment is essential, so that buying company identifies the potential improvement areas on the suppliers' side as well direction where development actions are needed.

Also, Sancha et al. (2016) investigated the role of collaboration and assessment but in the context of social sustainability. According to the findings, supplier assessment and collaboration have different impact on social sustainability depending on whether the situation is examined from the perspective of the buying company or the supplier. First, suppliers' assessment seems to improve the social reputation of buying company although it may not have any positive impact on suppliers' social performance. On the other hand, collaboration with supplier seems to have direct and positive influence on suppliers' social performance but it does not improve buying company's social performance. On the contrary, Klassen and Vereecke (2012) argued in their study, that collaboration between buyer and supplier improves the social performance of both sides.

As seen, the collaboration is in the key role while supply chain is pursuing towards sustainability. The collaborative practices include improved coordination between the buying company and its suppliers, customers and other stakeholders with the aim of jointly develop sustainable outcomes (Klassen and Vereecke, 2012). In addition, collaboration between the parties also emphasizes the value of building the capabilities of suppliers and/or customers instead of just a short-term outcome. Therefore, collaborative initiatives require long-term commitment to achieve deeper relationship and potential benefits. (Vachon and Klassen, 2006; Klassen and Vereecke, 2012) Finally, some companies utilize collaboration and jointly working to mitigate possible operational supply risks that might disrupt supply lines, increase costs or depress revenues while supporting suppliers to respond ever changing sustainability requirements (Klassen and Vereecke, 2012).

3. SUPPLIER DEVELOPMENT AND SUSTAINABILITY

Companies are facing various challenges in their daily operations, such as increased competition, more and more demanding customers and technological changes which need to be considered in order to stay in the competition. To respond these challenges, companies pursue to concentrate on their core competencies and thus, outsource the non-core activities to the outside service provider. These actions have decreased the in-house operations and allowed companies to focus more on their core competences but on the other hand, this has led to the increased dependence on suppliers. (Krause et al. 1998) Additionally, according to Glock, Grosse and Ries (2017), suppliers are increasingly seen as an essential part and contributors of the competitive advantage of the buying company. Due to these factors, companies need to manage and develop their supply chains as well as suppliers. To succeed, companies must achieve cost reduction, quality and on-time delivery improvements as well as increased customer satisfaction, and supplier development activity is considered as a key strategy to gain these objectives (Humphreys et al. 2011).

This third and final theoretical chapter focus on supplier development in general as well as in the context of sustainability. First, the concepts of supplier development and sustainable supplier development will be defined based on the prior academic literature. Then, this chapter discusses about supplier development practices and activities, and additionally, some examples from sustainability perspective will be presented. Finally, the chapter explains typical supplier development process and the steps included as well as considers possible benefits and barriers of supplier development adoption.

3.1 Supplier development

As mentioned, buying companies rely on their suppliers even more and more to produce some needed products or services. However, in some cases, it is possible that supplier's performance or capabilities does not meet the requirements of the buying company which leads to either supplier development or replacement. (Krause and Ellaram,1997). According to Glock et al. (2017), buyer may be dissatisfied for

example, quality, service levels, capacity, low innovation or sustainability awareness provided by suppliers. Buying company that confronts these kinds of shortcomings in supplier performance or capabilities can (1) replace the supplier with an alternative one, (2) produce the activity or purchased product in-house, (3) support and develop supplier to achieve the required performance level or (4) combine the above-mentioned options. (Krause et al. 2000) Despite of the several options, buying companies usually prefer supplier development due to the few main reasons. Firstly, the supplier switching costs can be excessively high and secondly, there may not be alternative suppliers on the markets. Thirdly, bringing back in-house the previously outsourced item may require significant investments from the company as well as contradict with the strategy of focusing only on the core competences. (Wagner, 2006a)

Supplier development has received a lot of attention during the last decades and it has been examined from several viewpoints by several authors. Supplier development can be defined as any action from buying company with the purpose of identify, measure, develop and improve the performance and/or capabilities of the supplier to meet the buying company's requirements either in the short-term or long-term. (Krause and Ellram, 1997; Krause et al. 1998). Watts and Hahn (1993), on the other hand, emphasize the meaning of long-term collaboration in order to improve supplier performance, such as technical or quality performance, as well as supplier capabilities. According to Wagner (2006b), fundamentally, supplier development aims to improve supplier's performance and capabilities, or the item purchased from the supplier, so that the critical functions of the buying company are improved. Furthermore, the development of supplier's performance and capabilities is essential from the perspective of buying company as these factors are in crucial role to create a competitive advantage and they support companies to stay in the market (Dalvi and Kant, 2015). Table 1 summarizes the definitions of supplier development from previous literature. Most researchers agree with these definitions and they are often referred in the relevant literature about supplier development (Wagner, 2006a).

Table 1. Supplier development definitions according to earlier literature.

Krause and Ellram (1997, 21)	*"any effort of a buying firm with its supplier(s) to increase the performance and/or capabilities of the supplier and meet the buying firm's short- and/or long-term supply needs."*
Watts and Hahn (1993)	*" a long-term cooperative effort between a buying firm and its suppliers to upgrade the suppliers' technical, quality, delivery, and cost capabilities and to foster ongoing improvements"*
Dalvi and Kant (2015, 653)	*"Supplier development (SD) is a kind of collaboration among a buyer and a supplier to seek constant improvement in supplier performance and capabilities to provide better quality, on-time delivery of products and services at lower cost."*
Wagner (2006a, 555)	*"supporting the supplier in enhancing the performance of their products and services or improving the supplier's capabilities."*
Handfield, Krause, Scannell and Monczka (2000, 37-38)	*" any activity that a buyer undertakes to improve a supplier's performance and/or capabilities to meet the buyer's short-term or long-term supply needs"*

Traditionally, buyers' role has been reactive and the relationship between supplier and buyer has been considered more as arm's length approach. In this approach the collaboration between parties as well as buyer's involvement in the supplier's business has been limited. However, if the company decides to choose proactive approach it is possible to achieve long-term and highly collaborative buyer-supplier relationship. It can be referred to supplier development as a concept when parties work jointly and collaborate, aiming towards the necessary improvement targets set by buyer company for its supplier. (Cox, 2004)

Hahn, Watts and Kim (1990) identified two different perspectives on supplier development which are narrow perspective and broader perspective. According to the authors, narrow perspective refers to the creation of new sources and developing suppliers who have not previously supplied products to the buying company in question. Conversely, broader perspective considers existing suppliers who currently supply products to the buying company and additionally, includes actions which intend to improve supplier's capabilities to correspond changing competitive requirements. Furthermore, narrow supplier development perspective is often more passive and periodic while broader perspective tends to be proactive with the aim to improve supplier's capabilities to achieve long-term and mutual benefits for both parties.

Likewise, Krause et al. (1998) found two different approaches that buying companies may use considering supplier development, reactive and strategic approaches. The strategic approach focuses on allocating supplier development resources to the targets which create competitive advantage and greatest benefits for the company. This approach is characterized by continuous improvement and long-term competitive advantage, and it is driven by supplier integration, value-added collaboration and technology development. On the contrary, reactive approach is often used by companies that begin developing suppliers only when the problem has already occurred, and supplier's performance threatens the buying company's ability to meet its customers' demand by not providing a competitive product or service. (Krause et al. 1998; Wagner, 2006a) Short-term improvements, correction of supplier deficiency and focusing on single supplier are typical for proactive approach and the main drivers are for example, negative customer feedback, quality and delivery issues and competitive threat for the buyer. (Krause et al. 1998)

According to the study of authors Krause et al. (1998), companies typically follow a five-step path towards strategic supplier development as well as improved supplier base performance. The first phase is total quality management which is followed by supply base assessment and reduction and finally, the path culminates to both reactive and proactive supplier development strategies which were described above. This progression towards supplier development strategies is presented in the figure 6.

Figure 6. Progression towards supplier development according to Krause et al. (1998)

Traditionally, supplier development has been concentrated on improvements in supplier's quality, cost and delivery capabilities as well as achieving economic goals. However, this is no longer enough if companies desire to stay in the competition and therefore, buying companies must also consider sustainability aspects. Sustainable supplier development can be defined as supplier development which considers environmental goals (e.g. energy efficiency and waste reduction) and socio-ethical goals (e.g. fairness, wages and bribery) beside the economic goals. (Busse et al. 2016) Although supplier development for sustainability and related actions are noted at least within the sustainability reports of global brands, the academic literature about the topic is still relatively poor and additionally, previous studies mainly focus on green supplier development practices. The prior literature about sustainable supplier development has focused more on environmental aspect due to the fact that social issues of suppliers, such as labor, safety or occupational hazards, are clearly more complex than environmental issues. (Liu et al. 2018) In the light of that, Lu, Lee and Cheng (2012) implemented the concept of socially responsible supplier development as a solution to the complex socio-ethical issues which highlights companies' social responsibility

beside the strategic one especially when the suppliers are operating in the developing countries.

Buying companies may rely on sustainable supplier development for example with suppliers whose environmental and social performance aren't in the required level but their economic performance and/or capabilities are satisfying or too valuable to be replaced. This above described situation has been common recently as the sustainability goals of buying company are often newly emerged or developed. (Liu et al. 2018) Additionally, sustainable supplier development is even more important as the supply chains are nowadays highly complex and global, and furthermore, suppliers are often located far in the emerging economies. Typically, these economies' sustainability conditions and practices related to environment, social and ethical attributes are often deficient compared to the buying companies in the Western countries. (Busse, 2016; Busse et al. 2016) Likewise, Khan and Nicholson (2014) investigated the interplays of developed and emerging countries, and according to them, supplier development programs are significant as the capabilities of some suppliers in emerging countries may not meet up with the needs of the buying company and there might occur a gap of asymmetry between the parties. Additionally, country-specific institutional pressures impact on the adoption of sustainability in supply chains and therefore, it is important to understand these differences, so that buying company is able to modify their development practices to improve also the sustainability outside the company's domain (Sancha et al. 2015).

Sancha et al. (2015) have investigated the drivers and enablers of sustainable supplier development in a global context and they argue that competitive reasons trigger the adoption of sustainable supplier development practices and accordingly, companies' specific capabilities enable it. The findings of their study indicated that especially the pressure coming from successful competitors and sustainability leaders (i.e. mimetic pressure) has a positive impact on sustainable supplier development adoption. Additionally, the increased competition, consumers awareness about sustainability issues and changed consumption habits as well as strict environmental laws and regulations have driven companies towards more sustainable supply chains in general (Kumar and Rahman, 2015). The sustainability issues have created pressure to

observe the whole supply chain and adopt sustainability practices to become more sustainable while maintaining competitiveness. (Kumar and Rahman, 2015; Mota et al., 2015). It can be stated that both external and internal pressure can drive supply chains to embrace more sustainable operations (Hassini et al. 2012), but on the other hand, according to study of Foerstl et al. (2015), especially strong external pressure by stakeholders drives companies to implement sustainability standards. To respond to the pressure stemming from stakeholders and to extend sustainability standards also to suppliers, buying companies may utilize supplier development practices (Sancha et al. 2015).

3.2 Supplier development practices

Previous literature has pursued to identify which practices and activities are the most effective ones considering the supplier development (Bai and Sarkis, 2011). In order to develop supplier's performance and capabilities, some supplier development practices, such as supplier evaluation, recognition and trainings, are needed. The previous literature has categorized supplier development practices in numerous ways and various development constructs. (Sanchez-Rodriguez, Hemsworth and Martinez-Lorente, 2005).

Supplier development practices are often divided either direct or indirect supplier development (e.g. Monczka, Trent and Callahan, 1993; Wagner, 2006a) based on the buying company's role and involvement in the relationship and the allocation of resources among its suppliers (Wagner, 2006a). In the direct supplier development buying company involves to supplier development activities and is willing to share resources for supplier to improve its existing capabilities and performances or to create new and better ones. Direct supplier development includes, for example, capital, equipment and technology support as well as on-site consultation, education, training and temporary personnel transfer (Monczka et al. 1993; Krause et al. 2000). However, direct supplier development may cause opportunistic behavior on the supplier side and therefore, buying companies should secure its supplier specific investments by building long-term relationship between the parties (Wagner, 2006a). Additionally, Monczka et al. (1993) pointed out that due to the limited amount of supplier development

resources, buying companies should carefully decide where to focus the supplier development efforts.

On the contrary, in the indirect supplier development the buying company is committed to share only limited number of resources if any. Instead, the indirect supplier development refers to incentives and enforces provided by the buying company as well as the use of external markets to improve supplier performance. (Krause et al. 2000; Wagner, 2006a) Moreover, Monczka et al. (1993) emphasized the meaning of suppliers' self-improvements as well as supplier encouragement and trainings in the indirect supplier development. Thus, indirect supplier development practices rather rely on compulsory power than active involvement from buying company and collaboration between the buyer and supplier (Wagner, 2010).

In summary, whether the buying company applies direct or indirect supplier development practices to develop incompetent supplier, it can expect improvements in supplier's performance and/or capabilities. However, direct and indirect supplier development practices should not be utilized simultaneously, but rather carry out and complete either one of the development practices with a certain supplier. (Wagner, 2010). Often, indirect supplier development actions have been seen as a first step before company starts direct supplier development actions with the supplier, for example knowledge transfer (Modi and Mabert, 2007).

According to Dalvi and Kant (2015, 663), supplier development activity can be defined as "any set of activities undertaken by a buying organization to identify, measure and improve supplier performance to facilitate the continuous improvement of the overall value of goods and services supplied to the buying organization's business unit." The authors identified numerous supplier development activities in their study based on the prior literature, for example, sharing knowledge, skills and experience, working jointly with suppliers, visiting supplier site, auditing suppliers, and solving problems together. Furthermore, Bai and Sarkis (2011) found in their literature review multiple different supplier development practices which can be divided into four main categories. These main categories are (1) knowledge transfer, (2) investment and resource transfer, (3) feedback and communication and (4) management and organizational practices.

However, the authors underlined that even though the supplier development practices can be roughly categorized, this division is not exhaustive or mutually exclusive. Additionally, overlaps and relationships between and inside the development practices are more than possible.

Sanchez-Rodriguez et al. (2005) underlined the importance of categorizing supplier development activities based on the company's level of involvement and implementation complexity. The importance of this categorizing is due to the possibility to better understand the implementation of supplier development activities and further, how these activities effect on supplier's performance. Consequently, the authors categorized supplier development practices into three different groups: basic supplier development, moderate supplier development, and advanced supplier development. It can be stated that basic supplier development shares similar approach to the subject than previously discussed indirect supplier development and it focus on developing suppliers with extremely limited resources and involvement. Basic supplier development practices include the evaluation of supplier performance and feedback, sourcing from limited number of suppliers per product as well as part standardization and qualification. On the other hand, moderate supplier development requires more resources, such as personnel, time and capital form the buying company than basic supplier development as the level of buyer involvement and implementation complexity is higher. This moderate supplier development includes practices, such as audits, rewarding and recognizing performance improvements as well as collaboration with the aim of material improvements. Finally, the advanced supplier development requires the most resources as the level of implementation complexity and buyer involvement are highest. The advanced supplier development consists trainings, supplier's involvement to new product design and critical knowledge sharing between the parties. (Sanchez-Rodriguez et al. 2005)

Supplier development practices can be considered also in the sustainability context. Sustainable supplier development practices pursue towards the targets of more environmentally and socially sustainable performance of suppliers. These practices include for example evaluation of the suppliers' environmental and social performance as well as supplier training in terms of health and safety and environmental practices.

(Sancha et al. 2015) Thus, sustainable supplier development practices are usually adopted by buying companies in order to make its suppliers environmentally and socially more sustainable (Zhu and Sarkis, 2004). Additionally, Liu et al. (2018) stated that due to the current sustainability issues, it is even more important that buying companies consider economic, environmental as well as ethical and social performance when they begin supplier development activities.

Supplier development has become increasingly important as it is essential for organizational strategic and competitive advantage (Bai and Sarkis, 2011). However, the study of Liu et al. (2018) proposed that specific capabilities are needed in order to implement sustainable supplier development strategies. Likewise, Sancha et al. (2015) suggested that it is easier to adopt sustainable supplier development practices and extend the sustainability to suppliers if the company's specific capabilities are high and allow knowledge transfer with suppliers. However, not all companies have the needed resources and knowledge to adopt the sustainable supplier development practices and accomplish the implementation. This is noted especially in the industries which have wide coverage, high diversity and geographical regions, such as food industry. Hence, buying companies as well as suppliers are even more interested to investigate external support to achieve needed knowledge and resources to implement sustainable supplier development practices. (Liu et al. 2018) As an example from the food industry, the International Cocoa Initiative collaborate with food companies and pursue to improve the social issues (e.g. child labor) in the cocoa growing communities by developing and supporting the supply chain management as well as by promoting good practices and building the partnerships (ICI, 2019).

The table 2 below summarizes supplier development practices and activities in general according to the Bai and Sarki's (2011) findings from previous literature. In addition, some examples from the sustainability context will be presented after Liu et al. (2018).

Table 2. Supplier development practices and examples from sustainability context.

Supplier development practice (Bai and Sarkis, 2011)	**Typical activities in general** (Bai and Sarkis, 2011)	**Examples from sustainability context** (Liu et al. 2018)
Knowledge transfer	- Providing trainings for suppliers - Advising suppliers related to manufacturing, technology, product development and quality - Education programs - On-site visits	- Training programs that provide sustainability knowledge - Organizational knowledge transfer about sustainability
Investment and resource transfer	- Supplier rewards and incentives - Invests in supplier's capacity building and transaction processes - Reducing supplier costs - Solving supplier's problems - Transfer of employees - Financing supplier's investments	- Recognize and reward supplier for high performance of sustainability - Promote recycling practices to reduce supplier costs
Feedback and communication	- Supplier evaluation and feedback - Providing feedback about supplier's performance - Setting improvement targets - Auditing suppliers - Information sharing - Regular joint meetings - Ongoing communication	- Implementation of social and environmental metrics and indicators - Information sharing between the parties
Management and organizational practices	- A cross-functional teams - Long-term contracts - Building top management commitment - Formal process for supplier development - Long-term plans to improve supplier performance - Identification of improvement opportunities related to critical supplier	- Build supplier's top management commitment to improve sustainability - Code of conducts for sustainability - Contractual requirements for sustainability

3.3 Supplier development process

Supplier development process can be described with a process figures and steps which can vary depending on the author. In this study, supplier development process is illustrated according to the generic process model of Krause et al. (1998) and it consists of ten steps to implement supplier development systematically and process-oriented way. According to Hartley and Jones (1997), process-oriented supplier development process is more effective than results-oriented supplier development, even though it requires much resources, such as time as well as significant commitment form the buying company. This higher effectiveness is mainly based on supplier's increased ability to act alone and the improvement actions in the supplier's side will continue even the buying company reduces development actions. (Hartley and Jones, 1997) The generic process model suggested by Krause et al. (1998) is illustrated in the figure 7. Next, the steps will be discussed with more details and the differences between companies with a proactive or strategic/reactive approach in supplier development will be compared.

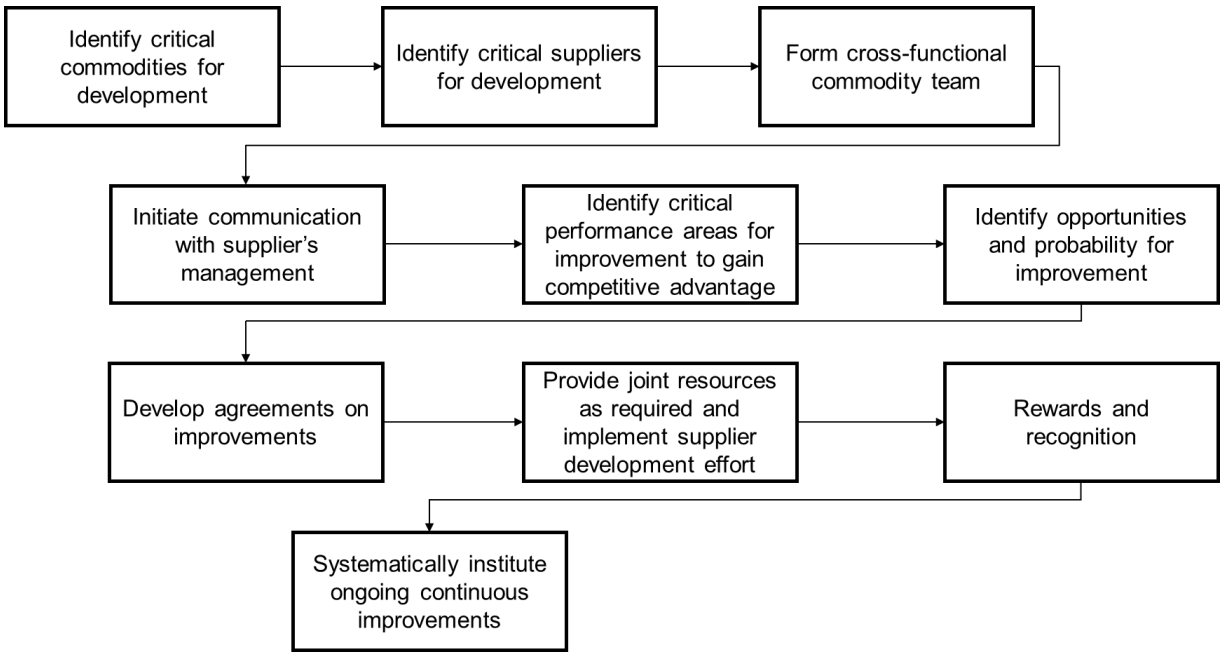

Figure 7. Supplier development process according to Krause et al. (1998)

The supplier development process starts with the identification of critical commodities for development. Especially companies that have adopted the strategic or proactive approach use their resources to identify and assess the most strategically important commodities purchased from other parties. On the contrary, companies that have adopted reactive supplier development process often ignored this first step. In order to identify the critical commodities, companies may utilize, for example Pareto analysis or purchasing portfolio analysis which aims to recognize low-risk and high-risk commodities as well as high-volume and low-volume commodities similarly than Kraljic's (1983) portfolio analysis. In the second step of process model companies identify critical suppliers for the development. Again, there seems to be difference between proactive and reactive adopters, as proactive companies tend to have more formal process to identify suppliers as well as measurement systems to evaluate suppliers' cost, quality, service, delivery, technology, and environmental performance. (Krause et al. 1998) Glock et al. (2017) suggested decision support models for supplier development and according to them, these models can be valuable as they support companies in practice to identify suppliers in need for development or optimal investment levels for development practices. These decision support models, such as Data Envelopment Analysis (DEA) or Analytic Hierarchy Process (AHP), have been used increasingly in the recent years.

In the third step of supplier development process companies start to form cross-functional commodity or supplier development teams. Proactive companies utilized cross-functional teams to improve the supply base's performance and to prevent possible issues beforehand while reactive companies implemented these teams when the issues occurred. The fourth step of supplier development process focus on the communication with supplier's management and the goal in this step is to create mutual benefits for both companies. (Krause et al. 1998) It is evident that appropriate communication with supplier and collaboration between the parties improves daily working practices within the company (Dalvi and Kant, 2015). In the fifth step companies pursue to identify critical performance areas which need to be improved in order to achieve competitive advantage. (Krause et al. 1998) This competitive advantage achieved from supplier development can be divided to two types according to Wagner (2006b), differentiation and cost leadership. Often, companies that adopted

proactive supplier development approach identified critical developing areas more than reactive companies and further, the improvements were driven by the end customer's expectations. (Krause et al. 1998)

The sixth step of the process includes identification of opportunities and probabilities for improvement. Especially proactive companies evaluated improvements considering the required feasibility, resources and time to accomplish the development process as well as potential return on investment. (Krause et al. 1998) This phase is important as the company has only limited resources and therefore, the company should carefully consider which suppliers to invest in (Monczka et al. 1993) and which supplier's development will benefit buying company the most (Krause et al. 1998). Additionally, Talluri et al. (2010) highlighted the importance of optimal allocation of resources among the suppliers and before investing suppliers, the buying company should understand the trade-off between the benefits and risks or return on investment by implementing the supplier development activities. In the seventh step parties must develop agreement on improvements and implement metrics to evaluate the success of the agreement. According to the study of Krause et al. (1998), proactive companies utilized metrics, such as percent cost savings, percent quality improvement, key product or service performance targets or technology availability. Ones the parties agree about the performance metrics, company can move on the eight step which consists of resources deployment and implementation of development efforts. In this step, proactive companies underlined the collaboration and joint improvements by both parties more than reactive companies. According to Wagner (2006a), companies' understanding of how supplier development practices are best implemented in day-to-day organizational practice is essential. However, there is a lack of formal step by step guidelines for implementation of supplier development activity (Dalvi and Kant, 2015) although the importance of this step is recognized.

The ninth step of supplier development process includes supplier's rewarding and recognition. In this step companies utilize rewards and recognition to further ongoing commitment. (Krause et al. 1998) According to Trent and Monczka (1999), performance related rewards have direct and positive impact on supplier improvements and besides, the rewards and recognition may expedite quality

improvements as well as promote supplier's commitment to satisfy buyer's individualized needs. The final step of supplier development process focuses on continuous improvement meaning that even the supplier development process has been completed, suppliers still need to be monitored and tracked to ensure the required performance level. Both proactive and reactive adopters can sustain the supplier development by creating new goals, continuing open communication and adopting continuous improvement strategies. (Krause et al. 1998) For example, Park et al. (2010) emphasized the meaning of continuous improvement and established a continuous improvement framework which covers planning, doing, checking and acting functions to improve company's plans, systems and manpower.

3.4 Benefits and barriers of supplier development

According to Dalvi and Kant (2015), several previous studies indicate that well performed supplier development activities lead to improved supply chain through better quality, customer service and channel performance. Buying companies must have capable supply base with competent suppliers in order to effectively compete in the increasingly competitive markets (Hahn et al. 1990) and thus, the buying companies are increasingly utilizing supplier development activities to ensure this high-performance supply base (Dalvi and Kant, 2015). Supplier development can bring various benefits for both buying company and supplier. Dalvi and Kant (2015) provided literature review about supplier development benefits and they recognized buyer's competitive advantage, strategic benefits, effective supply chain management, effective communication, improvements in supplier's quality and delivery performance as well as cost reduction as the most important benefits of supplier development.

Companies rely on supplier development in order to achieve competitive advantage and it can be considered as one of the most important benefits achieved by supplier development. According to Wagner (2006b), especially indirect supplier development can improve product and delivery performance which leads to a better buyer-supplier relationship and thus, higher level of competitive advantage. Additionally, supplier development activities, such as inter-organizational collective learning, are potential sources of competitive advantages and furthermore, supplier development can support

buying companies with their strategies of differentiation and/or cost leadership that also generates competitive advantage. Also, other authors (e.g. Monczka et al. 1993; Krause et al. 1998; Dalvi and Kant, 2015; Wen-Li et al. 2003) have identified competitive advantage as one critical benefit achieved by developing suppliers.

Another significant benefit of supplier development is improvements in supplier performance. For example, Monczka et al. (1993) found that buying companies expect performance improvements from their suppliers in product quality, inventory and transport costs, and lead-time reduction. Likewise, Krause (1997) stated that buying companies expect to receive improvements in supplier's performance in return to the supplier development efforts. They mentioned higher quality levels, shorter order cycle times, an increased percentage of on-time deliveries, and improvements in the relationships between the parties as a desirable benefit, to name a few. Additionally, Krause et al. (2000) argued that direct supplier development efforts, such as trainings and transfer of employees, have a positive impact on performance. This finding is also in line with the study of Humphreys et al. (2011) as they suggested that supplier development efforts improve both supplier and buyer performance. Finally, supplier development actions and investments may reduce transaction cost of the buying company especially in the long-run as well as reduce the uncertainty in the buying company's operations (Krause 1999).

In addition to the benefits of supplier development in general, some scholars have also studied supplier development benefits in the sustainability context. It can be stated that sustainable supplier development efforts can have beneficial impact on supplier's sustainability performance (Busse et al. 2016) but also, it can improve supplier's competitive position and thus, its economic performance (Hoejmose et al. 2012). This viewpoint is interesting and important as several studies focus on the advantages that buying company has gained through supplier development. Furthermore, by implementing sustainable supplier development activities, buying company can benefit improved collaboration with supplier, decreased sustainability risk as well as promotional benefits (Busse, 2016).

Despite the potential benefits of supplier development, buying companies face always a risk when they begin to invest on supplier development (Krause, 1999) and the risk comes along with the benefits. Therefore, buying companies need to evaluate the trade-off between the supplier development benefits and risk. (Dalvi and Kant, 2015) Additionally, previous literature has identified several barriers for supplier development, and they are for example, strategic barriers, mutual trust barriers, supplier reliability and capability barriers, integrative efforts and sharing barriers, buyer reliability and capability barriers as well as investment barriers. The results of the study conducted by Dalvi and Kant (2017) addressed that strategic barriers, mutual trust barriers as well as lack of top management support barriers are the most critical ones considering the supplier development.

Busse et al. (2016) investigated the contextual barriers of sustainable supplier development in the global supply chains as well as related remedies. The authors mentioned conceptual complexity of the sustainability concept, socio-economic differences, spatial and linguistic distance, and cultural differences as the main barriers that companies may face during the sustainable supplier development. However, buying companies can reduce these barriers by implementing remedies, such as effective joint communication activities, interactive and open organizational culture and cross-contextual understanding. Also, Krause and Ellram (1997) emphasized the importance of communication in supplier development and according to their findings, companies that communicated effectively and regularly with their suppliers seemed to be more satisfied with supplier and supplier development as well as more willing to devote resources to supplier development efforts.

4. METHODOLOGY

After the discussion of sustainable supply chain and supplier development theories, the empirical part is conducted. The objective of this empirical part is to get in-depth understanding of how supplier development can improve the sustainability of food supply chain and to respond to the set main research question as well as sub-questions. The study uses qualitative method as a research methodology due to the nature of the study. This chapter presents the used research methodology more closely as well as describes the data collection phases and the features of the Finnish food industry. In addition, the reliability and validity of the study is reviewed.

4.1 Research methodology and process

The first methodological choice in the research process is to choose whether to use quantitative or qualitative research design (Saunders et al. 2016, 164). In this study, the used research methodology is qualitative method. Qualitative research method is challenging to define as it focuses on practice rather than any logical concept and therefore, the qualitative method is usually defined as the contrary to the quantitative research method. This indicates that qualitative research is not based on measurement and it does not seek to use numerical data. (Koskinen et al. 2005, 30-31) In addition, according to Hirsjärvi et al. (2009), qualitative research method is based on description of real life and the purpose is to examine the subject in question as comprehensively as possible. The qualitative method was chosen as a research methodology of this study because it can discover deeper processes and further, it has unique ability to address issues of description, interpretation and explanation (Bluhm, Harman, Lee and Mitchell, 2011).

More precisely, this study relies on case study which is one of the most used qualitative research methods in business economics. Case study refers to a study that examines closely one or a few intentionally selected cases but sometimes there might be several cases under the examination. (Koskinen et al. 2005, 154-155) In this study, six cases have been selected for further examination. According to Yin (2009, 4), the case studies are suitable research methods when the aim of the study is to get extensive

and in-depth understanding about the topic. Furthermore, the form of the research questions (e.g. “how” and “why” questions) as well as the purpose of the research to explain the present circumstances more precisely influence on the choice of research method. Hence, considering the objective of this study and the form of the research questions, the case study was selected as the research method in this study.

This study follows the research process model after Hirsjärvi and Hurme (2001, 14). The process begins with the preliminary research problem which will be elaborated in the second stage. Defining the research problem and questions is the most important stage of the study as it influences later decisions about the data collection and research methods in general. In the last two stages, the research is conducted by collecting and analyzing the data as well as reporting and presenting the conclusions. The figure 8 describes the empirical research process model as well as the stages conducted considering this specific study. Before the empirical part and data collection, the basis for the study was created by presenting theoretical background as well as literature review about sustainable food supply chains and supplier development with the research questions and objectives. After the theoretical part, data was collected through the theme interviews and it was analyzed to find answers to the set research questions. The data collection stage and data analysis will be described more closely in the next sub-chapter. In the last stage the analyzed data will be compared to the previous findings of academic literature and the research questions will be answered and discussed.

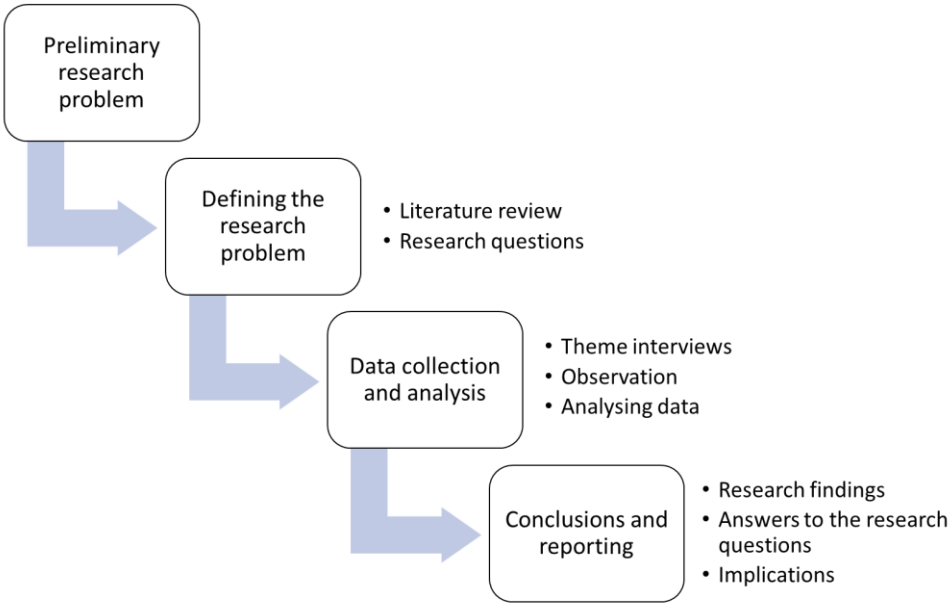

Figure 8. Research process model after Hirsjärvi and Hurme (2001)

4.2 Data collection and data analysis

In this study, the primary data is collected through the theme interviews and the empirical part of the study is based on these interviews. Theme interviews were chosen as an interview type because it is flexible and correspond to the nature of the research questions in this study. In theme interviews, the themes, topics and perspectives are planned beforehand, but nevertheless, the order and form of the questions may vary during the interview and the interviewee is not tied to any answer options (Hirsjärvi et al. 2008). Additionally, the theme interview allows more freedom to the interviewee and the researcher may participate to the discussion without fully controlling it (Koskinen et al. 2005). In this study, a total of six actors were interviewed from Finnish food industry. All the interviewees represent supply chain and/or food industry professionals from Finnish food industry, and they were all willing to participate to the research in question. The anonymity of the participating interviewees will be preserved in all the phases of this study in order to achieve open and in-depth discussion during the interview. Additionally, the identity of interviewees as well as the organizations they operate in are held confidential. However, the table 3 summarizes the positions of the interviewees to improve the reliability of the study.

Table 3. List of interviewees

Interviewee	Position of the interviewee
Interviewee A	Senior Procurement Manager
Interviewee B	Head of Direct Sourcing
Interviewee C	Chief Operating Officer
Interviewee D	Sourcing Manager
Interviewee E	Vice President, Sourcing
Interviewee F	Purchasing Manager

The interviews were conducted in October and November 2019 and the duration of the interviews were from an hour to an hour and a half. All the interviewees were approached via email or phone to settle a face-to-face theme interview. The interviews were based on the themes and questions stemmed from conceptual framework as well as research questions and they were formed beforehand. Anyhow, the interview also aimed towards open discussion between the interviewee and researcher. The first main theme was related to sustainability of food supply chains and the second main theme considered supplier development and sustainability more closely. Even though the interviews followed the themes and questions made beforehand, the interviewee had a chance to consider the topics within the theme and additional questions that arose during the interview were asked. All the interviews were recorded and partially transcribed for later analysis with the permission of the interviewees. The interview themes and questions are presented in the appendix 1.

Qualitative analysis can be divided either inductive or deductive analysis and, in this study, the inductive analysis method was chosen. In deductive analysis the study is based on some specific model or theory and the collected data is used to test and verify existing theory. (Tuomi and Sarajärvi 2018, 107-112). Due to the lack of theory directly linked to the research matter, the inductive approach was considered more suitable analysis method for this study. In the inductive approach the study proceeds from empirical research to theoretical results and it does not develop from theoretical propositions. However, the inductive approach does not fully disregard theories, but

they are used for example to define concepts and as a base for research questions. (Erikson and Kovalainen 2008, 22-24; Tuomi and Sarajärvi 2018, 108-109)

4.3 Reliability and validity

Research reliability refers to the possibility to repeat the same case study over again and end up with the same findings and results by using the same research procedures. In turn, validity refers to the ability of a research method to measure what it is intended to measure, and it can be divided into construct validity, internal validity and external validity. Construct validity identifies “correct operational measures for the concepts being studied” while internal validity seeks to establish a causal relationship where certain conditions are led to other condition and finally, external validity defines “the domain to which a study’s findings can be generalized”. (Yin 2009, 46-48) The reliability and validity of the research should be considered and evaluated in all case-based researches because the main criticism towards these type researches is related to the lack of rigor (Stuart et al. 2002). Additionally, according to Koskinen et al. (2005, 253), reliability and validity as concepts are central in order to improve the quality of the research.

All the interviewees are supply chain professionals from the relevant field and they were selected from different organizations in order to achieve comprehensive data and different perspectives from the food industry. Additionally, multiple interviews were conducted, and the positions of interviewees were provided to improve the reliability of the study. The research process was described in detail so that reader may understand all the stages of the research process and thus, make own evaluation of the reliability and validity of the study. Also, the research process was described carefully as it may improve the transparency of the study. On the other hand, considering the external validity, the research context was limited to Finnish food industry and therefore, the results can’t be directly generalized to other countries or industries, especially due to the special features of food industry.

All the theme interviews were recorded to the audio form for later analysis, which in turn improved the reliability of the study and allowed the researcher to return to the discussions that took place during the interviews. However, the interviews were conducted in Finnish and afterwards translated into English in some parts which may affect to the reliability of the study. On the other hand, the interview in the respondent's native language may provide a more in-depth discussion, which is important considering the research.

4.4 Features of Finnish food industry

This study discusses supplier development in sustainable food supply chains and the empirical part of the study was conducted in the Finnish food industry context. Hence, some features and background of Finnish food industry is presented briefly before analyzing the collected data. The food industry as an empirical research context is important due to the large size and the remarkable importance of this specific industry sector. According to Bourlakis and Weightman (2004), food is one of the most important factors considering the functioning of society and it also impact on health and happiness of citizens as well as the political stability of society. Therefore, it can be stated that any disruptions in food supply chains can have serious consequences for the safety of the people and the nation.

The food industry is Finland's biggest consumer goods manufacturer and fourth largest industry sector. The Finnish food industry and supply chains employ over 340 000 people which is 13 % of the total Finnish workforce and the industry's turnover in 2018 were 11,2 billion EUR. The Finnish food industry is characterized by small players and there are only limited number of large companies. Additionally, the industry relies heavily on domestic raw materials as the domesticity rate in Finland is 82 per cent. (Finnish Food and Drink Industries' Federation, 2019a) The Finnish food industry has transformed into its present state through many massive changes. For example, changes in business environment, technology and consumer behavior, as well as intense competition from Finnish and international companies has affected the industry. (Brännback and Wiklund, 2001)

As seen, the food industry is a significant actor in the Finnish industry sector and due to this factor, the Finnish food industry also faces some issues from a sustainability perspective as well as pressure to respond global sustainability challenges and customers changing demand. This sustainability aspect has been considered in Finnish food industry and according to Finnish Food and Drink Industries' Federation (2019b), the Finnish food supply chain sustainability can be divided into six different dimensions. These dimensions are product safety, nutrition, environment, animal welfare, economic sustainability and localism as well as employees' well-being. In general, it can be stated that Finnish food safety is a very high level and the animal disease burden as well as the use of pesticides are extremely low level (Business Finland, 2015).

The Finnish food industry has a few strengths, such as innovative R&D work, high standards of food manufacturing, responsibility and environmental know how as well as food safety know-how and control, transparency over the whole production chain and prevention of risks, and traceability through self-monitoring and quality systems (Business Finland, 2015; Finnish Food and Drink Industries' Federation, 2019a). These strengths also contribute to the sustainability of the Finnish food industry. However, nowadays only few food companies are able to meet the demand of consumers alone and thus, external resources are needed (van der Valk and Wynstra, 2005). This is the case also in the Finnish food industry and therefore suppliers and supplier development should be considered in terms of sustainability and further competitive advantage.

5. ANALYSIS AND RESULTS

In this chapter, the analysis and results of the study are presented based on the six theme interviews conducted in the Finnish food industry. This chapter provides the empirical view to the topic of the thesis. The results of this study are reviewed according to the two main themes of the interview, and these themes and questions included can be found in more detail in the appendices (Appendix 1). Firstly, the results and analysis concentrate on the sustainability in food supply chains and how the interviewed companies consider sustainability in their own supply chains. Secondly, the findings of supplier development in the light of sustainability are presented and finally, the role and issues of sustainability in the future food supply chains as well as supplier development as a tool to resolve these possible arising issues are analyzed.

Before elaborating on the two main themes, interviewees were asked for background information about the role of sourcing in their organization. During the interviews, it came clear that the role of sourcing has been recognized in the organizations in question and it has steadily increased. In the bigger picture, organizations seem to understand the importance and value of sourcing, and it is seen as a strategic part of the company's operations. Although awareness of the importance of sourcing has increased within the companies, one respondent noted that there is still a lot room for improvements. Additionally, another respondent emphasized that the size and the expertise of the organization have an impact on the role of sourcing. Especially SMEs may rather pursue to purchase large batches with the lowest possible price, and they may find it difficult to understand the value of strategic sourcing and what could be achieved through it due to the lack of know-how.

Several interviewees mentioned the direct impact of efficient sourcing on the company's profit and further, the value for owners. In many cases in the food industry, the costs of raw materials are extensive part considering the price of the final product and consequently, their impact and importance are understood well. On the other hand, one respondent mentioned that many saving targets are set for sourcing as its impact on costs has been noticed. In addition, nearly all interviewees stressed the

importance of collaboration in sourcing as well as the links and communication between the departments within the company.

5.1 Sustainability of the food supply chains

All the interviewees reported that their organization pursue to consider sustainability in their supply chains and sustainability is seen as a very important part of the sourcing. However, in practice, the supply chain sustainability is at a very different stage between the case companies. Only some of the interviewed companies have recognized the supply chain sustainability in their strategy or set supply chain sustainability targets, while some of the companies have their sustainability targets still in development stage. Interviewees mentioned sustainability goals, such as reducing food waste throughout the supply chain, reducing emissions (CO2), purchasing only certified raw-materials as well as securing human rights in the supply chain, to name a few. Some of the respondents described the sustainability of their supply chain as follows:

"It (supply chain sustainability) is truly an important part of sourcing along with the quality, delivery reliability and price"

"Sustainability is the starting point in the supply chain, meaning that we have a supplier approval process which involves checking supplier's economic, environmental and social elements."

In the food industry, product safety is a critical factor when it comes to the sustainability. Food companies must be able to guarantee the safety of their products as any safety issues can cause major harm or even danger to the end customer. Food product safety and reliability can be influenced by sourcing sustainable and safe raw-materials from the suppliers and thus, supply chain sustainability plays a key role. According to few respondents, one of the most critical sustainability issues is that the product supplied is not what was agreed with the supplier. For example, any kind of remnant in the product, such as nut, can critically affect to the safety of the product. Therefore, it is essential that food companies can rely on their suppliers and the whole supply chain.

In addition, companies aim to improve the sustainability of supply chain by the choice of packing materials or by reducing the amount of used materials. However, couple of the interviewees mentioned that this is not straightforward either as product safety must be ensured first if the packing changes. A few interviewees noted the importance of food safety as follows:

"*Food safety is our baseline and we don't compromise on that at all. The product we buy must be safe."*

"In the food industry it is about making the food that people eat, and at worst they can get sick or even die of it, so the sustainability has to be in an extremely good track. Additionally, we need to be able to trust our suppliers that what is being delivered is exactly what they say it is."

The motives and pressures for sustainability in food industry are presented in the table 4 below. The motives that emerged during the interviews are divided into four main categories, which are product safety, company values, risk management and competitive advantage. The importance of product safety was already explained, and it is also one of the motives when it comes to sustainability. Additionally, the interviewees emphasized the willingness of companies to do the right thing and act sustainably, and sustainability was considered the right and only way to operate in today's business. The ability to manage and reduce the sustainability risks and its potential disadvantages as well as possibility to achieve competitive advantage compared to other actors were also considered as motives for adopting sustainability in supply chains.

Table 4. Motives and pressures for sustainability in food industry.

Motives for sustainability:	
Product Safety	• Food safety • Sustainable product • Quality of the product
Company Values	• Right thing to do • Soft values • Showing the way • Willingness to act sustainably • Sustainability leader
Risk Management	• Reputational risks and brand risks • Sustainability must be in order • Standards
Competitive Advantage	• Added value • Competition • Global markets
Pressures for sustainability:	
Consumers and customers	• End consumers pressure • Retailers pressure • Consumer awareness of sustainability and quality • Demand for sustainability and transparency • Social media pressure
Owners	• Owners' requirements for sustainability • Ownership base
Competitors	• Competitive pressure • Competitors' actions towards sustainability

The pressures for sustainability are categorized to consumers and customers, owners as well as competitors. Sustainability starts with the consumers and their awareness about sustainability, such as environmental issues, has increased recently. In addition, consumers expect companies to be transparent throughout the whole supply chain and all the interviewees agreed that if any sustainability issues occur in the supply chain, consumers will hold the focal company responsible for those issues. Also, publicity and organizations disclose sustainability issues, and this is a challenge especially for large

brand houses whose potential sustainability issues are above news threshold. Along with the consumers, retailers as customers put pressure on food companies to act sustainably and according to their sustainability principles. The largest Finnish retailers have ambitious sustainability targets and thus, they expect their suppliers to reach certain sustainability performance level, but they also place constant price pressure on food companies. Beside these mentioned pressures, few of the respondents argued that the pressure for sustainability stemming from social media has increased especially recently and consumers discuss there about sustainability even more. However, this is not only seen as a positive thing as some of the information shared in social media is not reliable or truth-based.

Another mentioned pressure for sustainability is related to ownership base of the company and the importance that owners attach to sustainability. Hence, the owner's attitude towards sustainability impact on requirements. Finally, food companies face pressure coming from other competitors in the markets. Competitors' actions on sustainability force companies to at least assess whether to take similar actions itself. However, many interviewees stated that they strive to be a leader in sustainability in their own market area and they also pursue to engage competitors to act sustainably to gain more impact. In summary, companies face pressure for sustainability from several different directions which, however, is fundamentally a good thing. One of the respondents stated following about competitors:

"It is extremely good thing that others (competitors) get involved to sustainability because in the end, if you consider the total volume of any used raw-material, we are quite a minor player in many businesses. If we alone try to push sustainability forward, it would not lead anywhere, so it is only good that sustainability starts to spread widely to get it more effective."

Food companies face various challenges in terms of economic, environmental and social sustainability in their supply chains. Although companies pursue to consider all these mentioned sustainability dimensions in their supply chain, the interviews revealed that environmental issues, for example, are more easily perceptible than social issues. Further, different sustainability issues are emphasized in domestic and foreign suppliers and the scale is different. For example, one respondent stated that

the occupational safety violations in Finland may be related to the neglect of using hearing protectors while in high-risk countries the violations may endanger an employee's life. However, there is still need for improvements in domestic even though the sustainability is far ahead compared to the risk countries. Another respondent highlighted the fact that rarely the major sustainability issues are faced with the first-tier supplier but rather the problems occurs in the upstream of supply chain. This creates its own challenges due to the length of supply chains in the food industry and sometimes it can be difficult to track suppliers in the upstream. Some of the interviewed companies source their raw-materials from developing countries where there are various risk factors and country specific risks related to sustainability and many of these problems are linked to poverty.

As seen, it is evident that food companies may face several sustainability issues from their supply chain but even so, many interviewees argued that from the sustainability perspective, it is not responsible to switch supplier immediately if some problems occur. However, many interviewees stated that the decision whether to switch or develop supplier is dependent on the product category in question. One of the interviewees described their reactions to sustainability problems as follows:

"In principle, it would be quite easy to change our supplier for raw-material, but we have been working with our partners for a long time and it wouldn't be sustainable to just drop and switch to another (supplier) if some problems occurs. However, we have certain minimum criteria for some sustainability issues that must be in order, for example forced labor or child labor are not permit. Those are not negotiable, but in other issues, we rather help our partners to get on required level."

According to the interviews, it seems that most of the companies do not recognize or reward sustainable suppliers, but they have considered it and thought it could be possible in the future. Potential recognition and reward of sustainable suppliers was seen as an opportunity especially in the cases where supplier could use them as a reference and thereby benefit. However, one of the interviewed companies reported that they already reward their well performed and sustainable suppliers, for example by inviting them to a factory visit in Finland, but also in these cases the intention is to

emphasize two-way communication between the parties rather than just reward. Several respondents mentioned that they are increasingly requiring sustainability and sustainable materials from their suppliers and, as an incentive, volumes are allocated and centralized to sustainable suppliers so they can benefit from it.

5.2 Supplier development in food supply chains

There are several definitions for supplier development in the earlier literature and they are presented by different authors (e.g. Krause and Ellram, 1997; Watts and Hahn, 1993 and Wagner, 2006a). During the interviews, respondents were asked what they think supplier development is, and the answers emphasized the importance of collaboration and partnership between the parties, innovation and development, monitoring and measuring, mutual benefits as well as improved performance level, for example in terms of quality and sustainability. Table 5 presents the features and results of supplier development according to the interviewees.

Table 5. Features of supplier development

Collaboration and Partnership	Innovation and Development	Performance Improvements	Monitoring and Measuring	Mutual Benefits
• Strategic partners • Long term partnerships • Close collaboration • Common interests • Open dialog • Commitment • Working jointly	• Development together • New concepts • Innovations	• Quality improvements • Product safety • Efficiency improvements • Sustainability improvements • Suitable product for the need	• Monitoring quality • Monitoring delivery reliability • Coordination • Active measuring • Evaluation	• Added value • Advantage also for supplier • Win-Win • Sharing benefits and/or disadvantages

Nearly all the respondents stressed that supplier development is a close collaboration between the parties, and it is about long-term relationship. The aim of supplier development is to achieve mutual benefits and added value for both actors and hopefully ultimately for the whole supply chain. Even though it is business in question,

supplier development must lead to mutual benefits as it strengthens the supplier's commitment to invest in the partnership. Supplier development also requires commitment and open dialogue from the company to the supplier and its development. Nevertheless, one respondent noted that supplier development alone is a narrow perspective and the focus should be rather in the supply chain development. In addition, supplier development seeks improvements in performance level by operating more effectively, rationally and sustainably as well as by actively monitoring and measuring the direction.

5.2.1 Motives and benefits of supplier development in food supply chains

Interviews revealed that the motives for supplier development are largely related to improving cost-efficiency as well as quality. One respondent stated that they strive to develop their supply chains as smooth as possible and control costs at different stages of the supply chain. Supplier development can directly affect to the purchase price and reduce possible hidden costs as well as provide quality and performance opportunities. Additionally, companies can aim to ensure availability in important product categories and influence on bottlenecks through supplier development. For example, one interviewee mentioned that they have partnership with one supplier to ensure the availability of critical raw-material which is characterized by uncertain and variable availability. However, this raw-material is also characterized by sustainability issues which are especially related to the rights and conditions of employees. Therefore, case company utilizes supplier development to ensure the availability of the raw-material but also the social sustainability, such as the minimum wages for employees. As one of the interviewees mentioned:

"The motive (for supplier development) is to get the right quality at the right time sustainably and with the reasonable price"

.

According to one respondent, companies must constantly develop their own operations due to the tight competition in the food industry and large part of the added value comes from the company's supplier base. Therefore, the company itself can't develop unless the supplier base develops and as a result, the company's competitiveness may

suffer. Likewise, many other respondents agreed that supplier development can bring competitive advantage for the company, for example by getting access for new products before competitors which enables earlier entry to the markets or by building a new concept or adding value that other competitors may not have. Companies can also seek new innovations and thus, competitive advantage by supplier development. For example, one interviewee stated that they innovate sustainable packing alternatives together with their supplier. In addition, companies can pursue towards their own sustainability goals, such as carbon dioxide emission reduction, by developing suppliers and collaborating with them, and thus, obtain concrete evidence of actions to improve supply chain sustainability.

As seen, companies may achieve several valuable benefits by supplier development, such as cost efficiency, improved performance level and competitive advantage. However, supplier development is also essential for the continuity of operations in the long-term as well as for finding a common direction for the entire supply chain. Further, supplier development benefits include advanced raw-material traceability, more transparent collaboration and improved partnerships. All in all, companies can benefit from a more efficient and sustainable supply chain by developing suppliers.

In general, suppliers have a positive attitude towards development actions and partnership, and most of them want to evolve, though there are exceptions. Furthermore, the company's desire to develop supplier communicates its willingness to collaborate and work jointly with the supplier. However, as mentioned earlier, the supplier must also benefit from the supplier development, and supplier's attitude towards the development actions is highly related on whether the supplier itself benefit or not. Without common interests, supplier development is built on a weak basis, but in turn, suppliers are more positive about the development for example, if they feel that they can learn or gain new customers through the development. Additionally, the attitude of suppliers is influenced by the corporate culture and the way of working. Some suppliers are more ready and willing for development while some may express resistance to change. Supplier development is also affected by the number of suppliers in the product segment and in some cases, there are no other alternative suppliers in the market, or the replacement costs can be high. According to one interviewee, it might be difficult to dictate development actions in such situations where supplier

knows they are the only option, or in the case of large supplier with its own precise processes. Likewise, another interviewee shared this perspective and mentioned that the power relations between the buyer and supplier affects to supplier development actions. However, if the need for development can be justified, the suppliers might be ready for development actions.

5.2.2 Enablers and barriers of supplier development

The table 6 presents the enablers and barriers of the adoption of supplier development according to the interviewees. Several interviewees mentioned that supplier development requires the company to understand the importance and role of sourcing and how much added value could be achieved through it instead of focusing only on unit cost. In addition, all the respondents emphasized the importance of trust in supplier development and one described trust as a deal breaker, it either prevent or enable supplier development and partnership. Another respondent stated that trust must be bidirectional, and the company pursue to be trustworthy, for example by not sharing purchase prices within the group. In addition to trust, factors such as openness and transparency, long-term commitment at different levels of organization, collaboration and common interests as well as development supporting information and quality systems can enable the adoption of supplier development.

Table 6. Enablers and barriers of supplier development adoption

Enablers of supplier development adoption	• Openness and transparency • Reciprocity • Mutual trust • Personal chemistry • Commitment to partners at company level • Collaboration and partnerships • Common goals and targets • Coherent corporate culture • Sourcing strategy • Commitment and support from top-management • Perseverance • Technology and digitalization • Resources for strategic sourcing • Supporting information and quality systems
Barriers of supplier development adoption	• The role of sourcing is not understood • The potential for added value is not understood • Not a strategic product or raw-material • Lack of resources • Lack of trust between the parties • Lack of know-how • Only potential risks are seen • The importance of external resources is not understood • Lack of suppliers' capabilities • Supplier is not seen as a long-term supplier • Reluctance to share information • Lack of clear goals

Another key factor that prevents or correspondingly enables supplier development adoption is the resources available. Although the importance of supplier development

was understood in all interviewed companies, only a few respondents reported that they have enough time and resources for it. The lack of resources was mainly due to the amount of operational work and the more it can be reduced, the more time is freed up for supplier development. One interviewee stated that supplier development is one of the most important tasks in her/his job and consequently, there must be time for it. Additionally, digitalization and technological development were seen as one way to reduce operational work, but they also facilitate supplier development and improve supply chain transparency. Another respondent argued that by the means of technology and digitalization, company can see in real time or with only a short delay the suppliers involved in the supply chain and thus, the development action can be allocated directly to those parts of supply chain where the problems occur or where there is a high risk for it.

Few of the interviewees noted that supplier development is not always necessary or right way to operate. Supplier development is not required for example in all product categories and the decision to develop can depend on how strategically important the raw material is for the operations of the company. In some cases, the supplier development is not used if the supplier is not seen as a supplier in the long term, or the collaboration will come to the end for one reason or another. Additionally, the company's attitude to development in general also influences to the adoption of supplier development. It is more difficult to justify long-term development actions if the company is looking for just short-term profits. Therefore, supplier development is dependent on how much company values and prioritize development in its operations. Furthermore, one respondent emphasized that company itself should have clear goals and a consensus on what is aimed to achieve through the development.

One interviewee stated that supplier development is more about partnership and that will be developed. Likewise, many other respondents mentioned the importance of long-term partnership in terms of supplier development. However, long-term partnerships were not seen as an enabling factor in all cases, and one respondent mentioned that long- term suppliers might be used to doing things in a certain way, and they may not be receptive for new ideas or development projects, for example related to sustainability.

5.2.3 Supplier development practices in food supply chains

Table 7 summarizes the supplier development practices used in the interviewed case companies. The used supplier development practices vary slightly between the case companies, but all the interviewees reported, for example, supplier audits, regular communication and on-site visits as a supplier development practice. Again, several interviewees highlighted the significance of open communication and collaboration between the parties as well as partnerships in supplier development practices.

Several interviewees mentioned that although supplier audits are used, the main focus is still in food safety and quality as they are truly business critical factors. Nevertheless, sustainability aspects, such as environmental and social issues, are considered in the same context but only few companies reported that they do purely sustainability audits. One respondent stated that they are currently developing their auditing process and sustainability is going to have a large role in it. Simultaneously, company's employees are trained related to sustainability issues as well as conducting sustainability audits. Some of the interviewees stated that they conduct supplier audits themselves while others indicated that they utilize both own audits as well as audits made by third party. The use of third-party audits was explained, for example, by lack of know-how of what social, environmental and economic sustainability means in different countries. In addition, some argued that third-party audits are more objective because they don't have either a buyer's or seller's interests. On the other hand, one interviewee noted that it is essential to see and learn what is happening in the origins of raw-material and understand the existing realities.

Table 7. Supplier development practices in food industry

SD Practices	Explanation of SD practices
Supplier audits	Main focus still in food safety and quality, sustainability aspects included even more
Code of conduct	The supplier's commitment to the company's ethical principles, suppliers are required to sign a code of conduct. Sustainability aspects included to the code of conduct.
Communication and Feedback	Active, ongoing communication between the parties, regular positive or negative feedback, sustainability communication to suppliers
Development projects	Joint development projects, cross functional teams, participation to sustainability programs
Joint meetings	Regular meetings with the supplier, sustainability issues even more as a topic of the meetings
Knowledge transfer	Knowledge and information transfer between the parties, requires trust
On-site visits	On-site visits to suppliers e.g. producers' farms, supplier meetings. Geographical distances, resources and costs are challenges for on-site visits
Supplier evaluation	Supplier measurement, monitoring and guidance, setting of sustainability goals, risk evaluation, supplier self-questionnaires
Supplier incentives	Bonuses and sanctions, volume allocation e.g. to sustainable and well performed suppliers
Working jointly	Working jointly towards the common goals, involvement of suppliers

Nearly all the case companies require their suppliers to sign code of conduct and hence, commit to the ethical principles of the company. According to one interviewee,

supplier development starts from these ethical principles of the company and what the company wants to be respected and emphasized in their supply chain. Another interviewee described their code of conduct and related process with suppliers as follows:

"All of our suppliers must sign the code of conduct. They are not our suppliers if they do not sign it. In addition, we go one tier backwards and each producer must be approved. We have so many situations that we buy product from company X who buys it somewhere else. So, it makes no sense to approve just the company X, but we have to approve the one who really makes that product."

One respondent noted that different development projects are important supplier development practices. The aim of these projects is to gain impact at the level of small farmers so that it is profitable and a good livelihood for them and hence, ensure the availability of raw-materials in the future. Furthermore, another respondent stressed the importance of participating in various sustainability programs as well as investing in important supply chains. Although it is not direct supplier development, it is strongly linked to sustainability and the well-being of the community, which on the other hand contributes to the well-being of suppliers and producers and thus, affects the availability of the raw-material.

As already mentioned, case companies utilize supplier development but how sustainability is considered varies between the companies. Several interviewees stated that sustainability is a newer aspect of supplier development since food safety has been rightly a priority earlier. Although sustainability for supplier development is still in the early stages within many case companies, respondents mentioned that it is under the development and quite many of them expected sustainable supplier development to be emphasized in the organizations in the future. Despite the general stage of sustainable supplier development, a couple of the case companies reported that sustainability is well considered in their supplier development. One respondent stated that nowadays in their organization, supplier development is even more focused on sustainability than quality, although they are both balanced and important factors. However, the respondent continued that this is since the suppliers in question are long-

term partners and at the beginning of the partnership the focus was more on quality or delivery reliability, but currently the focus is more on sustainability issues. Furthermore, the trade-off between sustainability and quality is not possible, and the supplier must operate sustainably as well as the quality must meet with the company's quality requirements, or the collaboration can't continue. The stage of sustainable supplier development within one case company was described as follows:

"Now the emphasis has shifted in the direction of sustainability in supplier development. We expect sustainability from our suppliers, and we want to highlight to them that sustainability is important to us. We are still in early stages of it (sustainable supplier development) and it is under the development, but we are more and more moving in that direction."

5.3 Future role of sustainability and supplier development in food supply chains

All the interviewees agreed that supplier development can influence and improve food supply chain sustainability. Food companies require and expect certain sustainability performance level from their suppliers, and those suppliers who wish to do business with the company ensure that these sustainability requirements are appropriately taken care of. One interviewee argued that supplier approval process should already influence to the sustainability of supply chain as basic standards and performance level are required from every supplier. However, another respondent remarked that although companies require certain level of sustainability from their suppliers, the true effectiveness is achieved through collaboration and partnerships. Supplier development is already used to some extent to improve the sustainability of supply chains, but according to the interviews, its role will only increase in the future. Additionally, a few respondents argued that suppliers will be more willing to develop themselves towards sustainability as well as increasingly communicate about their sustainability to the buying companies. This is mainly due to the increasing requirements for sustainability.

According to the interviews, the importance of sustainability will increase and emphasized even more in future food supply chains. Despite the huge price pressure and competition in the food industry, many of the respondents argued that sustainability will become a baseline at some point. One respondent noted that more networks are required to influence supply chain sustainability more widely and to gain effectiveness in the future. Moreover, sustainability certifications and goals will be increasingly demanded, and food companies are more willing to emphasize product and/or brand sustainability. Also, the transparency of supply chains as well as the traceability of raw-materials will be highlighted. However, improving transparency and traceability in food supply chains is challenging as these supply chains are usually very long and complex. Shortening the supply chain was considered one way to improve transparency and traceability, but several interviewees argued that it is not practically possible in the current global business environment. On the other hand, one interviewee mentioned that their customers demand even more local and domestic products which naturally influence to the length of supply chains, but several case companies need raw-materials that aren't available domestically, for example, due to the specific growth conditions. In these cases, the trust in supplier as well as supplier management are increasingly emphasized.

According to the interviews, there will be new sustainability issues in the future that are difficult to predict beforehand. However, several interviewees mentioned that especially environmental issues, such as global warming and climate change, will be highlighted in future food supply chains. Climate change, for example, influence on different levels of food supply chain operations, narrows the growth areas of some raw-materials as well as reduce crops which can lead to increased hunger. In addition, raw-materials may not be available on the same scale in the future. These issues can cause chain reactions and place people at an unequal position, which in turn, can lead to exploitation and social problems.

As seen, food supply chains will face multiple challenges regarding the sustainability in the future. However, interviewees were quite optimistic that supplier development can be utilized to respond to these sustainability issues, at least to some extent. On the other hand, sustainability comes with a price which, according to one interviewee,

will inevitably transfer to the consumer at some point and thus, consumer behavior has an impact on supply chain sustainability. Overall, there is still plenty of work to be done to achieve more sustainable supply chains, and consequently, one interviewee stated that sustainability is never complete, there are always challenges or things that could be developed and done better. Therefore, companies should constantly strive to challenge themselves and set the bar higher to push sustainability.

6. DISCUSSION AND CONCLUSION

The sixth and final chapter presents the discussion and the final results of the study. In this study, the sustainability and supplier development concepts have been investigated from theoretical perspective. In the empirical part, the concepts were examined together in the context of Finnish food supply chains. This final chapter firstly discusses and answers to the set research questions. The answers are based on the previous analysis conducted in the empirical part. In addition, the empirical results of the study are reflected to the prior theoretical literature. After the discussion, conclusions as well as managerial implications of the study are presented. Finally, the limitations of the study are discussed and the suggestions for further research are provided.

6.1 Discussion of the research questions

The aim of this study was to understand how Finnish food companies could improve supply chain sustainability by supplier development and identify the utilized supplier development practices as well as enablers and barriers. The previous studies on these topics have often focused on only one certain dimension of sustainability and especially environmental aspect has received much attention. However, in the empirical part of this study, the dimensions are not limited in this way but instead all the sustainability dimensions are included. The study utilized qualitative research method and the analysis and results are based on the data collected through six theme interviews. The main research question as well as three supporting sub-questions were set at the beginning of the research process according to the research objectives. Firstly, the sub-questions are answered one by one and then, the main research question will be discussed based on the results of these sub-questions.

What kinds of supplier development practices are used to improve sustainability in food supply chains?

Several authors have investigated supplier development practices (e.g. Bai and Sarkis, 2011; Dalvi and Kant, 2015) in prior academic literature. The supplier development

practices identified in this study are mainly in line with the previous studies, with a few exceptions. For example, Bai and Sarkis (2011) recognized supplier development practices such as on-site visits, supplier evaluation and feedback, auditing, regular joint meetings and ongoing communication which were also mentioned during the case company interviews. Furthermore, knowledge transfer, incentives for suppliers as well as working jointly were likewise found as supplier development practices. The authors Bai and Sarkis (2011) also identified trainings and education programs as well as recognition and reward of suppliers as typical supplier development practices, but based on the findings, it seems that these practices aren't widely used in Finnish food supply chains. This is interesting as previous studies have shown that, for example, rewards and recognition have a direct and positive impact on suppliers' performance improvements (Trent and Monczka, 1999) as well as it furthers ongoing commitment (Krause et al. 1998). On the other hand, the interviews emphasized the importance of joint development projects as a supplier development practice which did not arise from previous theoretical literature.

Although supplier development practices are used to improve the performance of food supply chains, in many cases, the focus remains on other matters than sustainability. During the interviews, the role of supplier development to ensure food quality and safety was highlighted, which was expected in the context of food industry. However, sustainability issues are recognized in food supply chains and a certain level of sustainability is required from suppliers, but direct supplier development practices to improve supply chain sustainability are still limited. This empirical finding could be explained by the study of Liu et al. (2018) as they argued that several companies lack resources and expertise to adopt and further implement the sustainable supplier development practices, and they suggested external support as a solution for this. On the other hand, the results of this study indicated that the emphasis on sustainability in supplier development practices will become even more prominent in the future and additionally, there was noticed a willingness to adopt and utilize sustainable supplier development practices among the case companies.

Why supplier development is important in the food industry?

The results of this study indicate the importance of supplier development in the food industry since company can achieve several significant benefits and advantages through it. However, the results underlined the meaning of close collaboration and partnerships with supplier as well as common interests and mutual benefits in order to successfully develop supplier and achieve potential benefits in the long-term. Based on the empirical findings, companies utilize supplier development with the aim to improve, for example, product quality, cost effectiveness, availability, buyer-supplier relationship as well as sustainability and thus, achieve a more efficient supply chain and ultimately, added value and competitive advantage compared to other actors on the markets. Many other authors (e.g. Dalvi and Kant, 2015; Wagner, 2006a; Krause, 1997) have found similar results related to benefits of supplier development. Furthermore, the study found that supplier development is necessary to gain new innovations or products that competitors do not yet have. This is particularly important as consumer preferences and consumer habits are constantly changing, and food companies must be able to react quickly to these changes in order to stay in the competition.

Food companies are facing huge pressure to operate more sustainably, and sustainability is required throughout the supply chain, not just from the company itself. According to the findings of this study, the pressure for sustainability is stemming from consumers and customers, owners and competitors. The study of Sancha et al. (2015) argued that mimetic pressures are the main triggers for sustainable supplier development adoption which couldn't be fully confirmed in this study. Instead, especially customers' demand for sustainability and transparency as well as company values and willingness to act sustainably were underlined as triggers for sustainability adoption. However, the results of this study show that supplier development is important as it can improve food supply chain sustainability and thus, supports to respond to the sustainability demands and pressures of various stakeholders.

Food industry is usually characterized by long and complex supply chains (Maloni and Brown, 2006) and therefore food companies face several risks and challenges. The results of the study indicated that supplier development can influence and improve the

performance of supply chains, for example, in sustainability issues and thus, supplier development can be considered a very important tool in the food industry. This finding is in line with the study of Busse et al. (2016) who noted that supplier development is an effective tool especially in the terms of supply chain sustainability risk reduction. In addition, this study confirms the findings of Seuring and Muller (2008) who stated that focal companies are usually held responsible for any supply chain sustainability problems that may arise. In this light and given the specificities and requirements of the food industry, such as criticality of food safety, supplier development can be considered highly important.

What are the enablers and barriers of supplier development adoption?

As many authors have argued (e.g. Apte and Sheth, 2017; Gold et al. 2012; Carter and Rogers, 2008; Gimenez et al. 2012) collaboration and trust between the parties is essential in order to develop more sustainable supply chain. This is supported by the findings of this study as collaboration, commitment to the partnerships, mutual trust as well as openness and transparency were considered as the most important factors contributing to the adoption of supplier development. The study also found that case companies understand the role of collaboration in the supplier development and it was agreed to be more efficient and preferred approach than just monitoring and controlling suppliers. This was also noted by Sancha et al. (2015), who stated that the adoption of sustainable supplier development requires clear collaboration between the parties beside the resource investments. In addition, common goals and coherent corporate culture, personal chemistry, sourcing strategy, top-management support and appropriate information systems were found to be factors that enable the adoption of supplier development.

In general, according to the empirical findings of the study, the understanding of strategic sourcing and potential added value is inevitable in order to adopt supplier development. Additionally, resources available are critical enablers or barriers of adoption of supplier development and related practices. The empirical findings suggest that in many cases, the companies do not have enough resources available to adopt and implement supplier development although the need for it is recognized. This finding about limited resources has also been observed in prior academic literature

and, for example, Monczka et al. (1993) remarked that, due to the limited amount of resources, companies must select carefully which suppliers they invest in. Also, Dalvi and Kant (2017) identified barriers for supplier development and according to their findings, especially strategic barriers, mutual trust barriers as well as lack of top management support barriers are the most crucial ones. The results of this study are in line with the findings of authors' Dalvi and Kant (2017), but in addition to these, consensus on supplier development targets within the company as well as company's overall attitude towards development actions was found to have an influence on supplier development adoption.

How can companies improve sustainability by supplier development in food supply chains?

The main objective of this research was to find how Finnish food companies can utilize supplier development to improve the sustainability of their supply chains. The empirical findings of this study showed that the understanding of sourcing as well as the recognition of sustainability at the strategic level is essential to improve the food supply chain sustainability. In addition, companies need to understand the importance of supplier development and the potential advantages of it in the long-term. Company values and mindset must support both sustainability as well as supplier development, and it requires top-management commitment. If the company recognizes the importance of sourcing and sustainability at the strategic level and is committed to the long-term supplier development at all levels of the organization, then allocating resources to development practices would be more justified. This is notable for the adoption and implementation of sustainable supplier development as the results of this study indicated.

Based on the empirical findings of this study the collaboration and partnerships are crucial to supplier development and thus, more sustainable food supply chains. Both parties must benefit from the development practices and the target should be a win-win situation as this will enhance also the supplier's commitment to the partnership. Furthermore, collaboration and mutual benefits were seen more effective in improving sustainability in food supply chains than assessment and dictation. The earlier

literature also supports collaboration in general (e.g. Carter and Rogers, 2008) as well as in the context of supplier development (see Sancha et al. 2015) to achieve improvements in supply chain sustainability. However, the study found that partnerships and collaboration require absolute trust between the parties in order to start developing suppliers and thus, seek improvements in food supply chain sustainability.

The findings of this study also indicated the importance of risk perspective of supplier development and food supply chain sustainability. This aspect is emphasized especially in the food supply chains as mistakes, for example in food safety, can't be afforded and further, the potential disadvantages are so critical that sustainability can't be ignored in food supply chains. Thus, the sustainability of food supply chain can be influenced and improved by evaluating suppliers as well as by identifying, assessing and managing risks. All in all, the results of the study argue that supplier development has a positive impact on food supply chain sustainability. This is remarkable finding as the study of Krause, Vachon and Klassen (2009) noted that company can't be more sustainable than its' supply chain.

6.2 Recommendations

The results of this study provide implications for supply chain managers and professionals of food industry about the role of supplier development in sustainable food supply chains. The results of the study pointed out enablers and barriers of supplier development adoption. The supply chain managers can reflect these identified factors on their own operations and thus, avoid potential pitfalls and barriers related to supplier development. The results of this study also help supply chain managers to recognize and understand the factors that are vital for adopting and succeeding in supplier development in the food industry. In addition, food companies should set sustainability targets directly for supply chains, in addition to company level targets, and the empirical results show that top management must commit and support the procurement team to achieve these targets.

Considering the potential benefits achieved through supplier development, food companies and supply chain managers should allocate more resources for it and additionally, prioritize more supplier development practices in their operations. Given the fact that only limited resources are available, supply chain managers should be able to categorize strategically most important suppliers and target supplier development activities to them. In addition, Finnish food companies should utilize sustainable supplier development more extensively beside the food safety and quality aspects as well as implement the best supplier development practices. The sustainable supplier development practices are needed to improve the overall supply chain sustainability including all sustainability dimensions and to respond consumers' sustainability demands. If the company has resources and expertise for sustainable supplier development, and it recognizes the enabling factors and potential supplier development practices, it can achieve a more sustainable supply chain compared to other actors in the industry.

6.3 Limitations and suggestions for future research

Although the study explains the research gap there is still some limitations that needs to be considered. Firstly, the study was conducted by using qualitative case study and there were only limited number of theme-interviews, so these factors have an impact on the generalizability of the research. A total of six supply chain professionals were interviewed from Finnish food industry but nevertheless, the sample was too small to present generalized findings for the entire Finnish food industry. Furthermore, the findings can't be generalized as such to other industries due to the specific nature of food industry. However, the case study aims to get in-depth understanding about the topic in question rather than provide generalizations, and this objective was achieved in this study. Another limitation of the study was the differences in the supply chains of the case companies which also affected to the findings. The supply chains of the case companies varied as some of them were largely domestic while others were more global and additionally, the length and complexity of the supply chains varied.

Due to the limitations of the research method and the number of the interviews, it would be important to examine larger sample to confirm the results found in this study. Such

research could be conducted, for example, by using quantitative research methods and thus, more generalizable findings could be achieved. Additionally, future research could investigate different industries as well as different market areas and compare the similarities and differences of the results with this study. As mentioned earlier, the supply chain sustainability will be required even more in the future, so it would be interesting to examine whether different IT-systems and blockchains could influence and improve the sustainability of food supply chains. Furthermore, the impact of networks on supply chain sustainability and effectiveness could be a future research suggestion.

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APPENDICES

Appendix 1. Interview questions:

General questions:

1. What is your position in the organization?
2. What are your main responsibilities?
3. What is the role of sourcing in your organization?

THEME 1: Sustainability in food supply chain

4. How is sustainability considered in your supply chain? Do you have any sustainability goals or is it recognized in your strategy?
5. What are the motives for sustainability in food supply chains and where the motives stem from?
6. What kind of sustainability problems may occur from supplier side?
7. How are suppliers managed? Do you categorize or asses your suppliers?
8. Do you encourage or support suppliers to be more sustainable? How?
9. Do you recognize or reward sustainable suppliers?

THEME 2: Supplier development and sustainability

10. What do you think supplier development is?
11. What are the motives behind the supplier development?
12. What is the role of supplier development in your organization? (Is there some specific reason why your organization does not utilize supplier development?)
13. What are the barriers or enablers for the implementation of supplier development?
14. What kind of supplier development practices your organization use to improve sustainability in food supply chain?
15. How does your organization attempt to include sustainability to supplier development? What are the main drivers to adopt sustainable supplier development?
16. How can supplier development improve food supply chain sustainability?

17. What are the main benefits or barriers of supplier development in general? How about considering sustainability?
18. What is the role of sustainability in the food supply chains in the future and is there some specific issues that will be highlighted? Is it possible to utilize supplier development to resolve sustainability issues?

Do you have anything to add?