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Corporate Social Responsibility in Procurement: Environmentally Responsible Practices Case Study

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Jori Huhtanen

Supervisor: Katrina Lintukangas

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1. INTRODUCTION

Growing competition along with constant demand on cost-efficiency and customer satisfaction has brought new challenges for firms in global markets, especially in their area of corporate social responsibility and environmental responsibility. Firms and their supply chains have become increasingly globalized and at the same time, the criticism towards globalization have also increased, stating that free trade may increase global pollution. The critic is based on a view that free trade increases economic activity which accompanies pollution and it might also shift the production of some pollution-intensive products to countries with loose environmental regulations. Hence, companies are called to show greater social and environmental responsibility in their supply chain management. (Cruz 2013, 73) Weak environmental performance at any stage of supply chain might damage the company's most powerful asset, reputation, evidently leading to a decrease in sales and market share (Fabian, 2000).

Corporate social responsibility has grown over the past decades from a marginal concept into a complex and diverse issue making it an increasingly central factor in corporate decision making (Cochran 2007, 449). The global economic downfall that began at the end of 2007 brought even more focus on corporate social responsibility, especially in the financial markets (Werther & Chandler 2011, 21). It has become essential for corporations' success to act transparently and responsibly in today's modern, globalized world, where information can reach everyone in just a matter of seconds.

This background offers a fascinating starting point to start working on this study to explore corporate social responsibility in procurement especially from environmental point-of-view. First, essential theory is going to be presented on this matter which is then followed by empirical study which allows to analyze the issue in a more precise context. This study is going to define environmentally responsible procurement practices characterizing responsible procurement.

1.1 Research problems and objectives

The main objective of this study is to find and define environmentally responsible procurement practices. First, insight is given through existing theory on this matter which is then reflected to specific case company's practices. The case company of this study is a large Finnish forest industry company, Stora Enso. The goal is to find out how well theory and practice meet on this matter and can there be seen any essential differences on how environmentally responsible procurement is implemented in case company compared to scientific theory.

After having defined environmentally responsible procurement practices, second objective is to try to perceive how the environmentally responsible procurement practices are divided between the supply chain partners; purchasing firm and suppliers. This study aims to find out, how much can the purchasing firm effect on the environmental responsibility of purchasing and how much it is dependent on the suppliers and their actions. The procedure here is the same as in the first objective: approaching the matter through theory and then reflecting it with the empirical results from the case company.

The third objective of this study is linked straight to the case company Stora Enso. Objective is to find out how environmental responsibility have affected company's procurement and what requirements it has brought to the company. As one might guess, implementing corporate responsibility might bring new challenges to companies so this could serve as an example giving insight on what it actually requires from a company to implement environmental responsibility.

The main research problem based on the main objective of the study is:

1) **What kind of environmentally responsible practices can procurement be implemented with?**

Assistive research problems supporting the main problem are:

2) **How are the environmental responsibilities divided between the supply chain partners in procurement?**

3) **How implementation of environmental responsibility have affected Stora Enso's procurement and what requirements has it brought to the company?**

1.2 Research limitations

This study addresses corporate social responsibility specifically from environmental point-of-view. The concept of corporate social responsibility is presented in theory-part including economic and social dimensions in addition to environmental dimension. This is to assure the overall understanding of the CSR concept. However, the focus of this study is limited to provide only environmentally responsible practices in procurement, and hence the effect of economic and social factors are not considered. Corporate environmental responsibility is limited only to company's procurement activities leaving other operations out of this study. Additionally, this study is conducted as a single-case study which reflects the views of the case company that in this case is Finnish forest industry company Stora Enso. Therefore, this study is limited to consider environmentally responsible procurement only in forest industry.

1.3 Research methodology

This study is conducted as a single-case study which consists of two main parts: theory-part and empiric-part. Theory is mainly based on published scientific articles concerning the matter. In addition to this, books and other sources might also be used as a supportive material. Theory builds the foundation for this study which is later reflected with the empirical results.

The empiric material is gathered from the case company, Stora Enso, by interviewing one of company's divisions' purchasing manager. The interview is conducted as semi-structured online interview via email due to geographical distance. Semi-structured interviews are normally arranged face-to-face and consist of open-ended questions which the interviewee can provide his own perspective. Online interviewing is a simulation of this real-world situation. (Flick 2014, 197, 234, 237) In addition to this interview, extensive amount of other corporate information sources are utilized, such

as Stora Enso global responsibility report and Stora Enso supplier code of conduct. This is to support and ensure a comprehensive overview on Stora Enso's environmental responsibility actions in procurement.

The research method for this study is qualitative as this was conducted as a single-case study. Qualitative research provides profound information on the subject but often faces problems regarding the generalization of the information. However, explaining the research phenomena and making it understandable is essential in qualitative research, not necessarily proving its existence. (Alasuutari 2011, 231, 237) Therefore qualitative research was the right choice considering the scope of this study and resources available.

1.4 Theoretical framework

Theoretical framework for this study is shown below. Corporate social responsibility is the main concept which builds the foundation for the whole work. Below this are its dimensions: economic responsibility, environmental responsibility and social responsibility. Environmental responsibility is highlighted since it's the point-of-view for this study. Among with the CSR concept there are also other factors that influence the environmentally responsible procurement which are also presented in the picture. This framework demonstrates well the overall topic of this study and helps to give perspective on understanding the research subject.

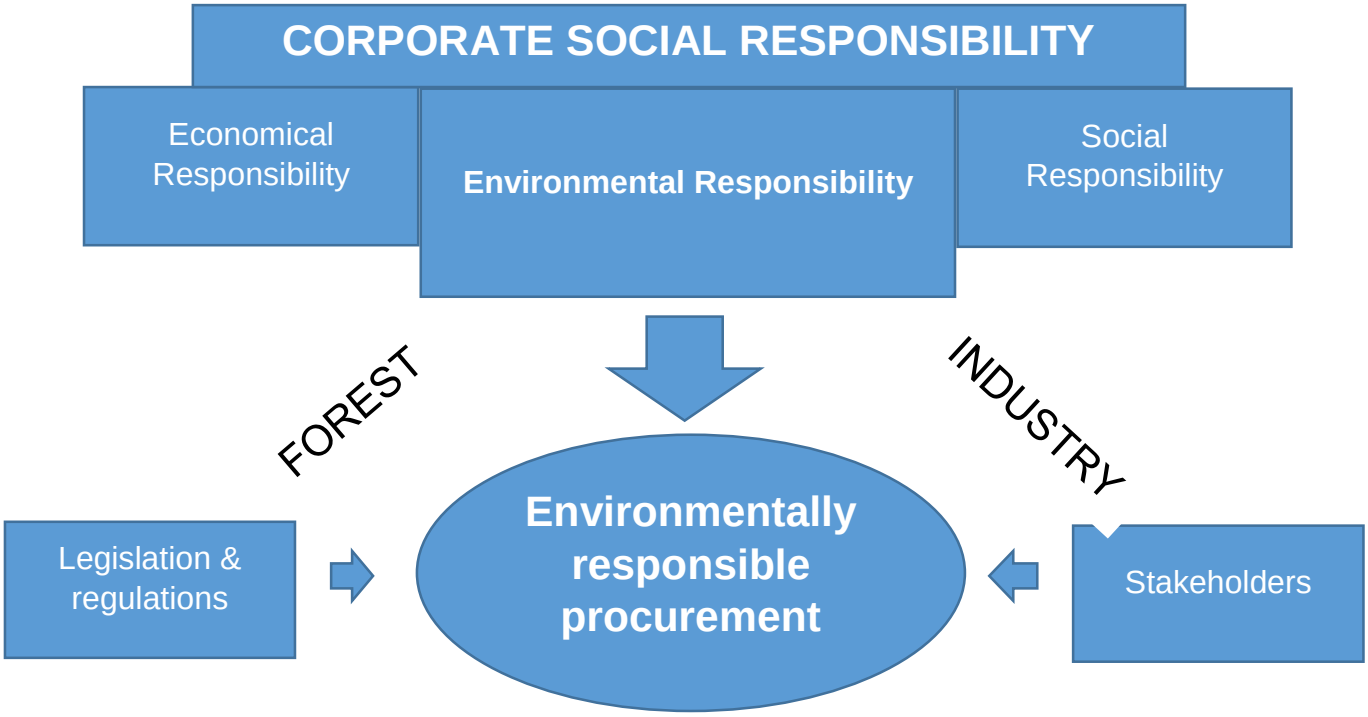

Figure 1. Theoretical framework

1.5 Literature review

Corporate social responsibility is relatively old concept and lot of literature has been written about the subject. Perhaps the first academic to introduce the concept was Harvard professor E. Merrick Dodd, who stated in 1932 that in addition to economic responsibilities managers had also social responsibilities to society. This statement became the basis for corporate social responsibility. (Cochran 2007, 449) The publication *Social responsibilities of the businessman* by Howard R. Bowen started the modern era of social responsibility in 1950 and in the 1960's and 1970's CSR literature faced a significant growth as for example Davis (1960) and Johnson (1971) attempted to define the concept. In the 1980's the focus moved from defining the concept to research and more alternative themes around the subject was born. For example, Cochran & Wood (1984) and Auppede, Carroll & Hatfield (1985) started to study the relation between corporate social responsibility and financial performance. In the 1990's very few unique contributions was made to CSR literature. (Carroll 1999, 268-288)

Reflecting this study field more precisely, lot of literature focused on environmental responsibility has also been written. Vachon (2007) wrote about green supply chain practices and how those practices can be implemented by using environmental technologies. Agan, Kuzey, Acar & Acikgöz (2014) have studied the relationship between corporate social responsibility, environmental supplier development and firm performance. According to this study, CSR is positively related to environmental supplier development which has a positive influence on firm performance.

Numerous studies have focused on the relationship between environmental responsibility and financial performance. For example, Elsayed & Paton have examined the link between environmental performance and accounting profitability with a result that environmental performance has a neutral effect on corporate profitability. Other studies (Griffin & Mahon 1997; Orlitzky et.al 2003) about corporate environmental performance and firm performance have also revealed inconclusive results. (Paton & Siegel 2005, 309-312)

Barnea, Heinkel & Kraus have also conducted another interesting study which deals with socially responsible investing (SRI). SRI is a growing trend in mutual fund investment where “green investors” screen their investment portfolio based on social or environmental criteria which can encourage firms towards environmentally friendly practices. Investors can also try to affect polluting companies to change their policies by short-selling their stocks. (Paton & Siegel 2005, 310)

Indeed, a lot of literature has been written about corporate social responsibility, and also about environmental responsibility, sustainability and green supply chain practices. This single case-study provides additional information on how environmental responsibility can be implemented in procurement, enriching the field. The concept of corporate responsibility is also developing constantly which is why new and updated research information is necessary to ensure the evolution of the concept also in the future.

1.6 Key concepts and definitions

Corporate Social Responsibility (CSR) can be defined as a concept where decision-makers have the responsibility to take actions that won’t only serve their own interests

but also protect and enhance public wealth (Davis & Blomström, 1975). However, the definition of CSR is widely debated among academics, some (e.g. Marrewijk, 2003) stating that precise definitions of the concept should be abandoned as it appears in many different forms depending on the development, awareness and ambition levels of organization. On the other hand, some academics (e.g. Wan-Jan, 2006) depict that CSR needs a working definition as the lack of widely agreed definition has caused misunderstandings and cynicism towards the whole concept. Also, when talking about corporate social responsibility, numerous different terms exist around the concept, for example terms like, “corporate responsibility”, “corporate citizenship”, “business responsibility”, “global business citizenship”, “social responsibility, “strategic philanthropy” etc. have been referred to CSR (Werther & Chandler 2011, 11) To avoid any confusion, the term corporate social responsibility is mainly used in this study.

Sustainability refers to the capability of something being maintained or sustained at a steady level without wasting natural resources or causing ecological damage (Collins English Dictionary 1998, 1543). The term *Sustainable development* is also often used referring to the fact that growing consumption increases the use of natural resources which is why the growth should be implemented sustainably. Sustainability is linked to corporate social responsibility as responsible companies should ensure to minimize its impact on natural environment. (Grant, Trautrims & Wong 2013, 30)

Procurement can be defined as the act of obtaining or purchasing goods and services (Business dictionary, 2014). The role of procurement in a firm is to “deliver the right material (or service) in the right amount to the right place at the right time and at the right price” (Sollish & Semanik 2012, 1). In recent years, the term *Strategic purchasing* has gained more and more publicity among the study field. Term refers to a more strategic role of purchasing in companies where purchasing can be seen as a process of planning, implementing, evaluating and controlling operative and strategic purchasing decisions which direct all activities of a purchasing function toward achieving company’s long-term goals (Carr & Smeltzer 1997, 201).

Green purchasing or green procurement is an effective way for companies to mitigate the environmental impacts of their consumption and to promote the development of clean technology. This involves interacting with all the other members of the company’s

supply chain in order to promote the genuine greenness of the whole supply chain including purchasing activities. (Chen 2004, 929)

1.7 Research structure

The study is divided into theory and empiric- parts. Theory sets the foundation for the study and gives the overall image of the subject. Empiric part deepens our knowledge about the subject and also offers a practical point-of-view for the study giving real-life examples from the case company.

The first chapter has described the guidelines of this study. Some background information has been presented along with the research questions, objectives and limitations. Research methodology and the theoretical framework of this study has also been presented. Literature review has enlightened the previous studies conducted in this field, and finally some key concepts and definitions have been explained.

In the second chapter, the concept of corporate social responsibility, including all of its dimensions, is going to be presented first which is then followed by the main part of this study: environmental responsibility. The concept of green purchasing is discussed along with important environmental technologies and environmental management systems. Third chapter is the empiric part of this study and presents the case company Stora Enso and its practical point-of-view about responsible procurement and its implementation. Finally, in the fourth chapter, a brief summary is offered and conclusions are made about the results of this study.

2. THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTALLY RESPONSIBLE PROCUREMENT

As defined in the previous chapter, corporate social responsibility refers to a concept where organizations act responsibly considering the effects of its actions to a society. This chapter offers a closer look at this concept and its dimensions, and more importantly, discusses about environmental responsibility in procurement, main themes being green purchasing, environmental technologies, environmental management systems, environmental collaboration and environmental monitoring.

2.1 Corporate social responsibility as a concept

An early and widely applied framework by Carroll (1991) for corporate social responsibility distinguishes 4 layers of responsibility which can be presented in a form of a pyramid. The base of the pyramid is economic responsibility referring to the ultimate responsibility of profitability while forming the foundation upon which all other responsibilities rest. Second stage is legal responsibilities which involves compliance to laws and regulations set by government and society. Once these responsibilities have been fulfilled, can organization move up to the next stage, ethical responsibilities. These are norms and values set by local culture and society and are not legislated. On the top of the pyramid lies philanthropic responsibilities, which company can start executing when the other three stages are passed. Philanthropic responsibilities refer to being a good corporate citizen by voluntarily improving the society the firm operates in.

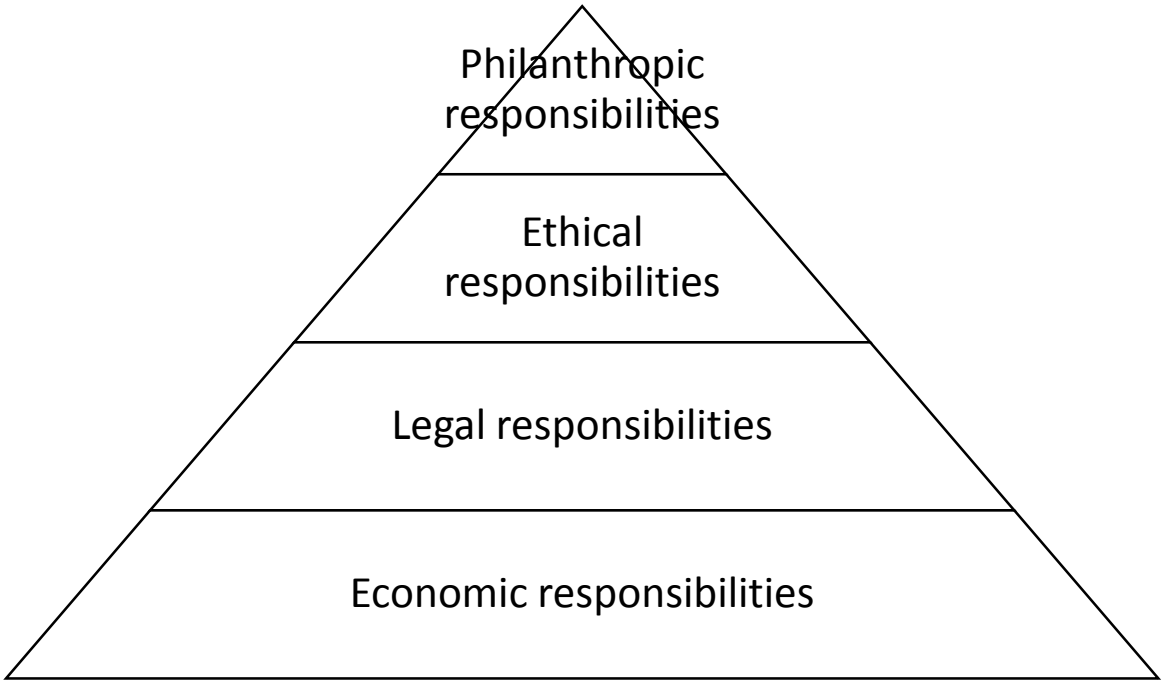

Figure 2. The pyramid of corporate social responsibility (Carroll, 1991)

Accordingly, the main objective of a company is to make profit and accumulate capital for its shareholders. Lately it has become more evident that this is successfully achieved only by acting responsibly and respecting the law and the society the firm operates in. Moreover, companies should be aware that contributing to sustainable development will become more essential aspect in successful business in the future. (Mihalache 2013, 131)

The concept of corporate social responsibility addresses these exact questions. Through CSR, companies can contribute successfully to sustainable development creating a highly competitive economy. CSR offers basically a set of values on which to create the foundation of a cohesion society based on sustainable economic system. (Mihalache 2013, 130) This study uses the perspective where the concept is divided into three dimensions: economic, social and environmental, which are presented next.

2.1.1 Economic responsibility

Economic responsibility refers to the firm's primary responsibility: profitability. Firm's objective is to make profit for the shareholders and to be competitive and act efficiently.

On the other hand, company has to also consider the economic effects of its actions for other stakeholders and society. Economic responsibility towards stakeholders can be both direct and indirect. Direct responsibility consists of direct cash flows, such as paying wages for employees and paying taxes for society, whereas indirect responsibility is more abstract containing aspects such as industry's importance for national economy or the effect of company's innovation management to society. (Niskala & Tarna 2003, 19-20) All in all, economic responsibility builds the foundation for the whole corporate responsibility concept. It guarantees that the firm's business is profitable and on solid ground enabling to start concentrating on the other dimensions of responsibility: social and environmental.

2.1.2 Social responsibility

The dimension of social responsibility contains a large set of social issues for firms to react. The direct social responsibilities are mainly bound around firm's employee's welfare, knowledge and capability. It contains various aspects such as respecting employee's values and culture, ensuring safe work circumstances, arranging occupational healthcare, improving work motivation and satisfaction etc. Social responsibility can also be broadened outside of direct employee responsibility. Then aspects such as health and security of the products, avoiding harmful material, proper product information and truthful marketing are considered. When considering the context of this study, the indirect social responsibility towards operational environment is most essential as it deals with the issue of multinational companies and their responsibility to develop well-being regionally based on, for example, their investment decisions. (Rohweder 2004, 103-104) Where economic responsibility formed the foundation for corporate social responsibility, social responsibility is in the core of the concept along with environmental responsibility that is to be presented next.

2.1.3 Environmental responsibility

The dimension of environmental responsibility in the context of procurement is the main focus of this study. Environmental responsibility revolves around nature and refers to firm's responsibility on their ecological environment. Topics such as efficient

and sustainable use of natural resources, ensuring the diversity of nature, participating on the prevention of climate change and the responsibility to minimize the environmental effects of product life cycle throughout the whole value chain, rise in the center of corporate environmental responsibility. (Niskala & Tarna 2003, 19-20) Conducting environmental responsibility has become more and more essential for firms over the past years as environmental questions, such as climate change and sustainable development, has risen to the fore of public discussion which has naturally raised the importance of corporate environmental responsibility. Therefore it is rewarding to study this dimension more closely and to try to define its role and importance in procurement.

2.2 Environmentally responsible procurement

Procurement activities involve working with close collaboration with the whole supply chain. Hence, a lot of companies have recognized in recent years the importance of their supply chain partners in managing the natural environment when conducting environmentally responsible procurement (Vachon 2007, 4357). For example, many large companies have developed comprehensive programs around the world to improve their environmental practices throughout the whole supply chain (Krut & Karasin 1999, Rao 2002, GEMI 2004b).

Proactive environmental programs refer to companies' investments in developing "green" products that are positioned as environmentally friendly. These programs include also recycling and waste reduction activities, saving energy and developing reusable packages as well as the objective of creating an environmentally sensitive corporate culture. (Handfield, Walton, Seegers & Melnyk 1997, Carter, Ellram & Ready 1998) However, many purchasing firms have concerns relating to these environmental programs as the investment in green products increase their total purchasing costs leading to a decrease in their competitiveness (Min & Galle 2001, 1222). In fact, the high costs of environmental programs are the most serious barrier to effective green purchasing (Min & Galle, 1997).

Still, it is possible to succeed and achieve competitive advantage by doing green purchasing and taking environmental responsibility into consideration in procurement activities. Green products are a rising trend among consumers which offers a great

marketing opportunity for firms. Green marketing can however only be conducted if company's environmental goals are integrated with purchasing activities which ultimately are the foundation for all the green products. (Min & Galle 2001, 1226) Therefore environmentally responsible procurement and green purchasing offers huge potential for firms to increase their competitive advantage and gain market share.

2.2.1 Green purchasing

Green purchasing refers to environmentally-conscious purchasing practices which reduce waste and promote recycling and reclamation of purchased materials without affecting the performance requirements of these materials (Min & Galle 2001, 1223). Green purchasing is a rising trend, and for example, more and more countries have regulated public procurements in favor of green products. Taiwan is a good example of this, as its latest government guidance on green procurements expects more than 60 % of its public services to come from green products. Also most developed countries, such as, Sweden, Germany and Japan have positively considered legal regulation on green purchasing. (Chen 2005, 930)

However, a typical purchasing firm that has limited financial resources faces challenges in employing a green purchasing- strategy. Green purchasing strategy may reduce the amount of qualified suppliers due to higher environmental standards since firms may need non-traditional materials which don't conform to higher product standards (Min & Galle 2001, 1223). Also, firm's environmental commitment leads to increased costs which causes a competitive disadvantage for the firm compared to other less environmentally responsible competitors (Vance, 1975). Still rising amount of firms engage in green purchasing as they see beyond the short-term shadow and acknowledge the considerable benefits that could be gained in a long run.

The first thing to consider in green purchasing strategy is supplier selection. Purchasing firms must involve suppliers in their environmental programs in order to meet their customers' environmental expectations (Walton, Handfield & Melnyk 1998). Environmentally friendly goods are becoming even more important factor in supplier selection which forces suppliers to develop their actions to this direction. Especially

large companies can influence supplier's actions since the supplier can't afford to lose a major customer. (Min & Galle 2001, 1226-1227)

The concept of environmental monitoring is related to supplier selection. It includes examining supplier's environmental practices and performance through questionnaires, audits and publicly disclosed environmental records, which of supplier audit and certification have attracted most attention (Min & Galle, 2001, Snir, 2001). One part of environmental monitoring is also complying to voluntary supplier requirements, such as ISO 14001- standards, which will be discussed more closely in the latter part of this chapter. Environmental monitoring focuses on the outcome of environmental actions made by suppliers in order to gain certification (e.g. ISO 14001) which is why it should be considered more as a risk management tool to prevent liability than as actual competitive "weapon" in green purchasing. (Vachon 2007, 4361)

Environmental collaboration is also relevant in green purchasing and it refers to the planning and implementation of environmental activities that require direct involvement between purchasing firm and its suppliers or its customers to jointly develop environmental solutions (Geffen & Rothenberg, 2000, Rao, 2002). Environmental collaboration requires specific resources to be invested in cooperative activities regarding environmental questions in the supply chain and the goal is to capture the added value emerging from this cooperation. Focus is more on developing the whole process of environmental operations than in the immediate outcome of the suppliers' environmental efforts. (Vachon 2007, 4360) Environmental collaboration with suppliers might be a good way at least for a smaller firm to address environmental responsibility since it doesn't have the same kind of power on the supplier as larger firms might. However, this too requires investments in resources which might affect the possibility for smaller firms to participate in environmental collaboration.

Another thing worth noticing is that environmental regulations are increasing in purchasing. According to Monczka and Trent (1995) this is one of the major concerns for purchasing management as it increases the fear of liability and fines and also, negative publicity. Companies have reacted to these concerns by starting to perform environmental compliance audits to help then conform to evolving environmental regulations (Min & Galle 2001, 1227). Like mentioned before, environmental

monitoring can also be used as a risk management tool for the purpose of prevent liability and to conform to evolving regulations.

One of the key concepts in green purchasing and sustainability is waste reduction. It is more cost-efficient to reduce waste at the beginning of the supply chain than to eliminate it at the end of the supply chain. There are two general ways of waste reduction: recycling and reusing, of which recycling has gained more attention. The difference between recycling and reusing is that recycling involves collecting, separating, processing and remanufacturing products into new products with a whole new usage whereas reusing only involves sorting, redistributing and repairing old products into second hand products. When reusing products, waste source separation system is crucial when determining what products can be reused and what can not be reused (Min & Galle 2001, 1228)

By recycling, firms can reduce the amount of materials used in their actions that will also result in reduced costs. According to Pagell, Wu & Murthy (2007), there are two main options for recycling: Recycling without disassembly and recycling with disassembly. Recycling without disassembly refers to a grind and sort- process in which products are first crushed and then grounded into materials and sorted by type. This rather simple recycling process enables firms to focus on maximizing functionality and reducing costs without having to alter the design of the product. (Pagell et.al. 2007, 135)

However, recycling with disassembly is even better method for recycling materials. When product is disassembled before recycling, components can be reused and some even sold in secondary markets recovering more value from the original product and the recycling process compared to recycling without disassembly where the product is just crushed and materials sorted. Recycling with disassembly is an innovative method with the potential to create new knowledge and unique competitive advantage. (Pagell et.al. 2007, 135-136)

With the above-mentioned facts, firms can create economic value by implementing green purchasing practices. Disposal and liability costs can be reduced as well as improving the company’s resource conservation. Green purchasing is also a way to enhance company’s public image as the trend of green products is rising. (Min & Galle 2001, 1229) According to Dassapa & Maggioni (1993) firms participating in recycling

programs can also receive tax reliefs. Recycling can be seen as a one of the main green purchasing practices for firms to implement their environmental responsibility by enabling significant waste reduction.

However, due to the common misconception that green purchasing programs are expensive, many companies have not composed a green purchasing strategy reducing their involvement in green purchasing practices (Min & Galle 2001, 1229). But like presented above, firms can benefit from green purchasing and create economic value. Methods such as recycling can offer considerable cost savings for companies improving their competitiveness and profits. Environmental responsibility and green purchasing are like any other company functions: they need investments in order to start making profit. Companies should not be too careful in investing in environmental programs and only focusing on the short-term costs and profit, but to see the “big picture”. In a long run, green purchasing practices will start to benefit firms by achieving considerable material and cost savings and return on the environmental program-investments.

2.2.2 Environmental technologies

The traditional classification of environmental technologies is dividing them into two categories: Pollution prevention technologies and pollution control technologies (Sarkis & Cordeiro, 2001). However, Klassen & Whybark (1999) proposed the following classification which categorizes environmental technologies into three categories based on relevant environmental management literature broadening the view of environmental technologies. According to Klassen & Whybark (1999) the three categories of environmental technologies are pollution prevention technologies, pollution control technologies, and environmental management systems.

Pollution prevention refers to technologies with the purpose of source reduction and other practices that reduce or eliminate the creation of pollutants (US EPA, 1990). This can be achieved by modifying technology or equipment to a more environmentally friendly direction or more importantly, modifying the whole process or procedure. Also, redesigning and reformulating products, substituting some raw materials with better materials and also improving maintenance, employee training, inventory control, etc

are essential pollution prevention practices. (Hossain, Khan & Hawboldt 2008, 5) By implementing these pollution prevention technologies, firms can reduce production costs, improve competitiveness and environmental performance as well as enhance customer trust and safety at work and of course, conserve energy and materials. (OECD, 1995) Pollution prevention technologies are an essential way for firms to reduce pollution and are in the core of corporate environmental responsibility. Purchasing firms should take this into account when evaluating and selecting its possible suppliers and executing its environmental responsibility.

Pollution control technologies are also structural investments on environmental technologies but in these technologies the focus is on ensuring the proper disposal of waste, correcting already occurred environmental damages and reducing the release of pollutants. (Vachon 2007, 4362) These technologies are often referred to as end-of-pipe technologies as they involve installing purification and detoxification units at the end of emission pipes to reduce emissions (Genaidy, Sequeira, Tolaymat, Kohler & Rinder 2009, 3240).

Ergo, the difference between pollution prevention and pollution control technologies is that pollution prevention technologies are used proactively to prevent pollution from happening in the first place whereas pollution control technologies are used reactively to control already occurred pollution. In this light, pollution prevention technologies should be considered as a more important way for reducing pollution than pollution control technologies as they offer a more strategic role for reducing waste for companies. In fact, in recent years sustainable industries have determined that conventional end-of-pipe technologies are costly to operate and maintain, and are not effective enough to control pollution (Hilson, 2000). Hossain et.al. (2008) also states that end-of-pipe technologies are not a sustainable solution in the long term. Of course, pollution control technologies are also important for companies to ensure the proper disposal of waste, but the focus is moving towards cleaner technologies and pollution prevention.

The third category of environmental technologies, environmental management systems, are infrastructural investments for improving environmental performance. Often these management systems include aspects of both preventing and controlling environmental degradation, such as formalizing procedures for evaluating

environmental impacts on investment decisions, training employees and raising their awareness on environmental issues, planning and scheduling production minimizing its environmental impact and also inventory management. (Vachon 2007, 4362) Environmental management systems have an important role in corporate environmental responsibility. It can be seen as a foundation for all the environmental technologies and environmental responsibility in the company as it forms some kind of a mindset for the whole company starting from the top management. Vachon (2007) defined environmental management systems as a tool for management which provides a framework for assessing environmental impacts and forming firm-level environmental strategies. Following certain formalized environmental procedures and taking environmental impacts of investments into consideration offers clear guidelines for firms on conducting environmental responsibility.

2.2.3 ISO 14000- standards

ISO 14000 is a formal, certified quality system developed by International Standards Office (ISO) in 1996 which consists of series of guidelines and processes to help direct companies' management to acknowledge technical standards. ISO 14000 standards are developed to create competitiveness by reducing manufacturing costs and to inspire management towards sustainable development through the design of green products and clean production technologies. (Chen 2005, 927)

ISO 14001 standard improves firm's awareness and involvement in environmental activities via continuous improvement process that consists of environmental education programs and environmental management systems (Feldman, 1996). ISO 14001 offers firms a possibility to investigate both financial and environmental performance and many studies prove that the implementation of ISO 14001 standards along with other environmental activities can increase firm's relative competiveness (Chen 2005, 928, Klassen & McLaughlin 1996, McGurie, Sungren & Schneeweis 1988).

In a procurement context, firms pressure their suppliers to apply for the certification of ISO 14001 and regulate that as a minimum requirement in supplier selection, although the ISO 14000 does not contain any specification on green purchasing. Still, the

certification encourages supplier firms to modify and develop their operations towards environmentally friendly direction with the aim to prevent negative environmental impacts and also, encourage the documentation of continuous environmental improvements. (Chen 2005, 928, Hammer, 1997) According to the empirical survey by Chen & Kuan, a growing number of manufacturers have received requests from multinational companies to apply for the ISO 14001 certification. External pressure is a common factor among suppliers to apply for the certification.

Firms can also encourage their suppliers and manufacturers to supply more environmentally friendly products by applying for the ISO 14021 certification. ISO 14021 is a product certification which addresses environmental labeling and serves as a guide for the consumer to choose green products. Labeling system provides information for consumers and helps them to understand the environmental impact of consuming the good. Therefore, if a firm refuses to certificate its products, it may face a loss of market share as environmentally conscious consumers demand the certification. (Chen 2005, 932) However, this is dependent on the product and the market segment, but serves as a good example how environmental responsibility can affect firm's performance.

According to the studies of Montabon, Melnyk, Sroufe & Calantone (2000), Rezaee (2000) and Chin & Pun (1999) the number of ISO 14001 certifications has been growing quite fast and according to the report by ISO (2011), over 250 000 certifications had been issued in 155 countries and economies until the end of 2010. This statistics supports the assumption that environmental issues and sustainability are becoming more and more important in business and firms have started to react on the matter in order to stay in the competition.

Chen (2005) presents a framework for implementing green purchasing practices in a firm shown below. Framework consists of three main stages: planning, doing and checking. Environmental management system ISO 14000 is the starting point and the foundation for all the green purchasing activities in a firm. Following the guidelines of ISO 14000, firms need to determine objectives and targets for green purchasing. Once this has been made, firms can move on to the planning stage, where firms determine how the objectives for green purchasing are achieved. Firms need to develop and select the best green purchasing practices for their needs and also determine how to

measure both economic and environmental impacts of these green purchasing practices. After careful planning, it's time to implement the green purchasing practices, which will increase purchaser's knowledge on the matter (Chen 2005, 930). Doing stage also includes monitoring and measuring the key characteristics of green purchasing and ensuring that they are synced with the ISO 14000 requirements (Kuhre, 1998). Finally, the checking stage includes evaluating the environmental performance of conducted green purchasing practices, and if the objectives are not met, corrective actions are needed to develop the practices more efficient.

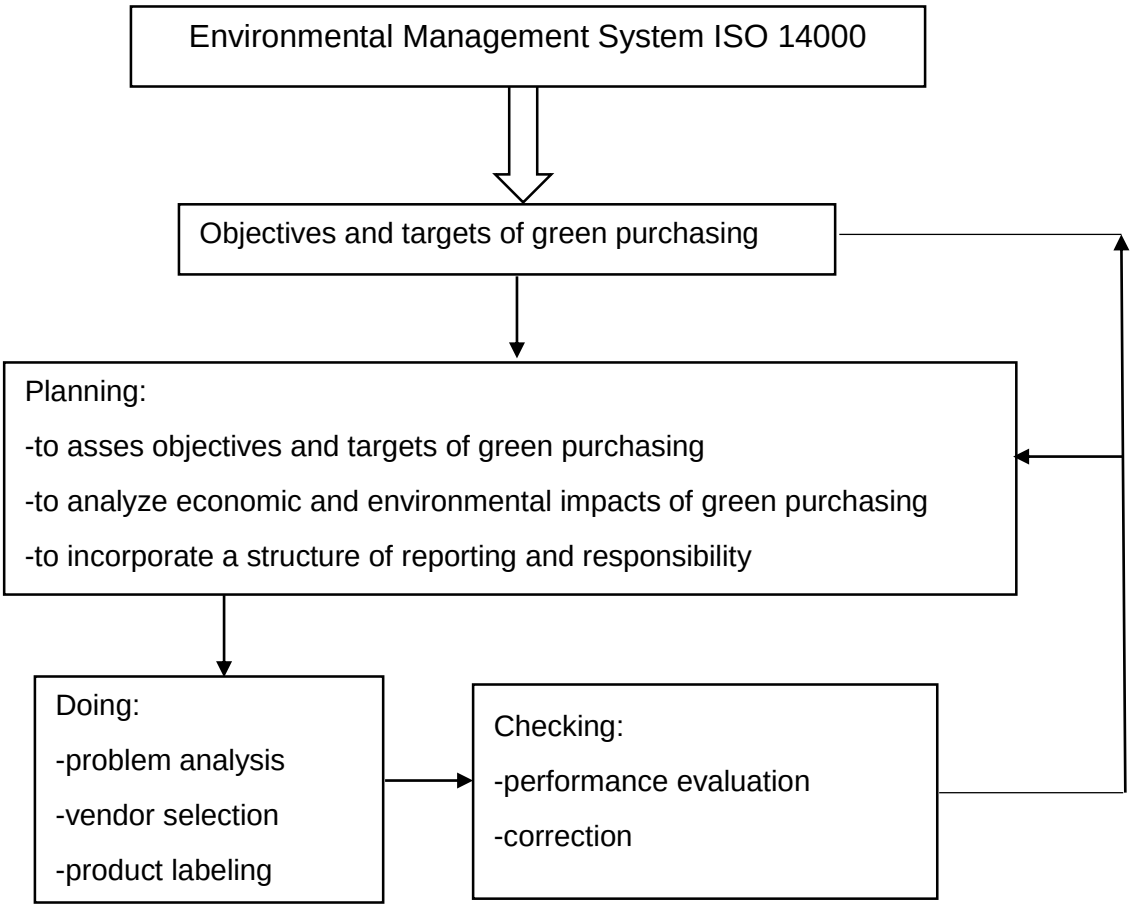

Figure 3. The framework of guidelines to implement a practice of green purchasing (Chen 2005, 930)

2.2.4 Framework for green purchasing practices and sustainable supply chain management

Below is presented the framework for green purchasing practices and sustainable supply chain management. Framework summarizes the theory presented in this

chapter and gives an overall image about green purchasing and features related to the concept. As one can see, green purchasing and environmental responsibility requires actions from both the purchasing firm and the supplier. Purchasing firm has a limited opportunity to affect environmental issues: it can employ environmental management systems, such as ISO 14000, and recycle and reuse the materials it purchases.

However, this is only one part of corporate environmental responsibility. Purchasing firm have to also consider its suppliers actions when selecting suppliers and perhaps require environmental management systems or active reduction of waste by proactive pollution prevention technologies from them. Consequently, environmental collaboration among the supply chain is important to ensure the success of environmental responsibility. Also, beside of environmental collaboration, environmental monitoring is a useful method for purchasing firm to monitor its suppliers, for example via auditing those on a regular basis and checking that all the supplier requirements are fulfilled.

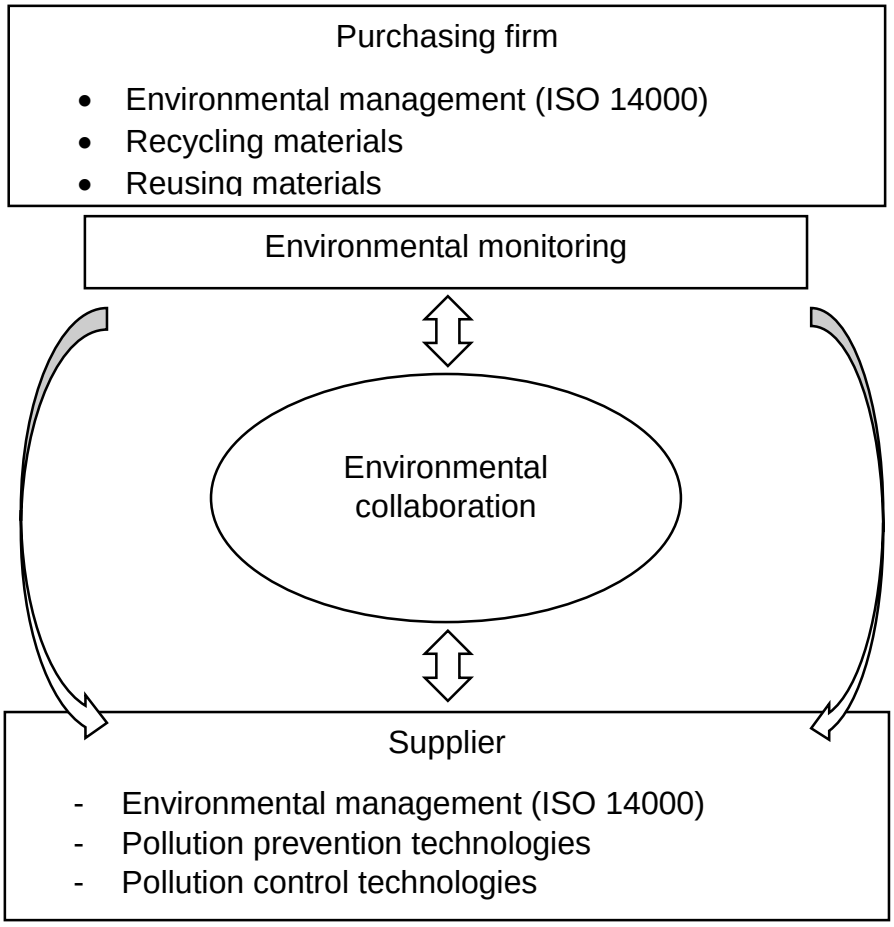

Figure 4. The framework for green purchasing and sustainable supply chain management

3. ENVIRONMENTALLY RESPONSIBLE PROCUREMENT IN CASE COMPANY

The empiric information in this study is gathered from one case company, Stora Enso, which is an international forest industry company that operates in paper, biomaterials, wood products and packaging industry. The group employs nearly 29 thousand employees in more than 35 countries worldwide and its sales amounted to 10,5 billion euro in 2013. (Stora Enso, 2014a) The company consists of four divisions: Renewable Packaging, Biomaterials, Building and Living and Printing and Reading (Stora Enso, 2014b). Stora Enso has the capacity to produce annually over 5 million tons of chemical pulp, over 11 million tons of paper and board, about 1 billion square meters of corrugated packaging and almost 6 million cubic metres of sawn-wood products, which includes about 3 million cubic metres of value-added products (Stora Enso, 2014a).

Based on the above-mentioned facts, company in question is without a doubt a large-scale enterprise that employs extensive corporate social responsibility program. In fact, the company purpose “Do good for the planet and the people” refers strongly to executing corporate responsibility and company’s strategy relies strongly on the use and development of renewable materials and sustainable solutions (Stora Enso, 2014c, Stora Enso Global Responsibility Report 2013, 8). Although the company purpose “Do good for the planet and the people” is only a vague slogan and part of the company’s strategic marketing, it reveals something about the fundamental values in the corporation that are also reflected in the company’s strategy. Also, Stora Enso works in the field of material-intensive production and industry where procurement can have an important role in the corporation and therefore the company suits well as a single case-study company in this research.

In this chapter, a semi-structured online interview with one of Stora Enso’s divisions’ purchasing manager is presented offering empiric information on procurement activities and how it’s connected with corporate environmental responsibility. Plenty of other material available, such as Stora Enso global responsibility report and Stora Enso supplier code of conduct (COC), are also used to introduce the corporate responsibility concept in Stora Enso and to support the forming of a comprehensive overview of the topic.

3.1 Corporate responsibility

Stora Enso uses the term “global responsibility” in all of its corporate responsibility actions. Company’s purpose, “do good for the planet and the people” acts as a foundation for the whole global responsibility concept and in fact, company’s global responsibility consists of concrete actions to fulfill the purpose. Stora Enso’s global responsibility involves setting clear priorities, targets and tools for implementing and measuring their sustainability performance along the value chain. In addition to this, corporate values “Lead” and “Do what’s right” guide the global responsibility agenda as the company consistently acts in accordance with their values. (Stora Enso Global Responsibility Policy 2013, 1)

Below is a figure summarizing Stora Enso’s global responsibility which is divided into three categories: environment and efficiency, people and ethics, and forests and land use. Each category has its own targets and key performance indicators (KPI).

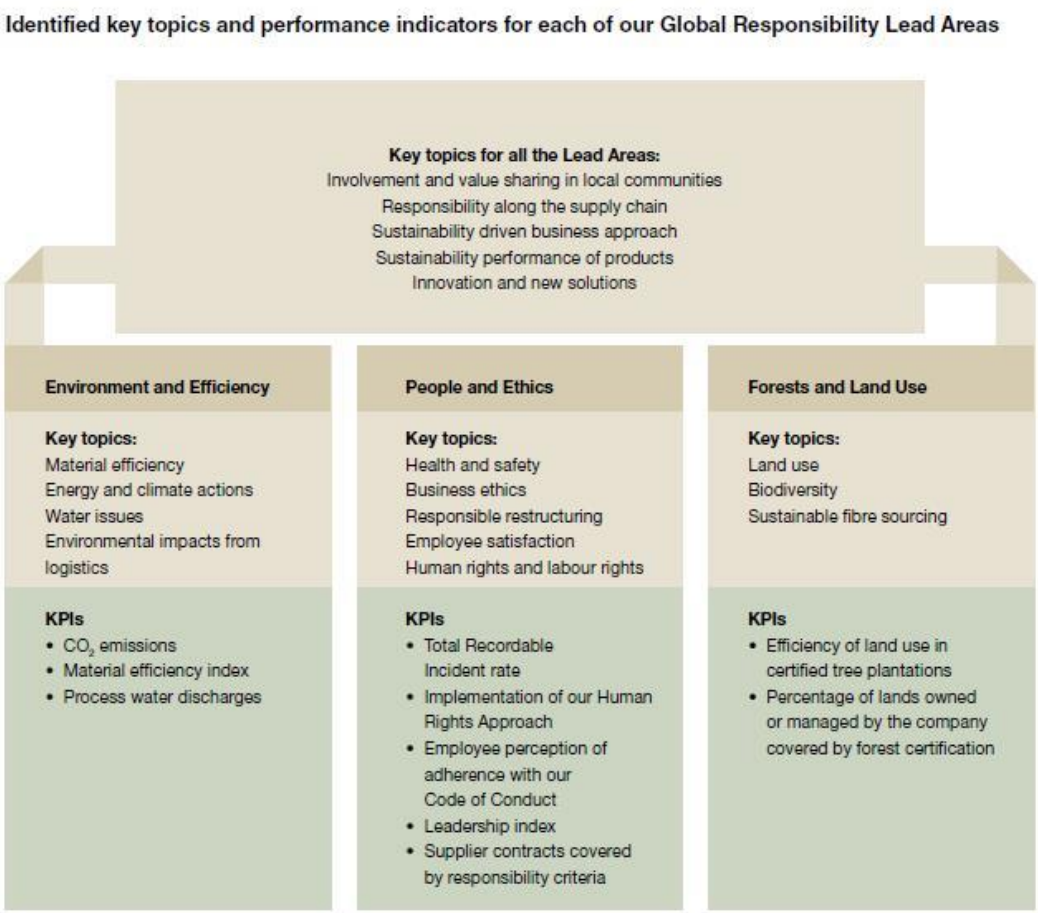

Figure 5. Stora Enso global responsibility (Stora Enso, 2013a)

Environment and efficiency is built on renewable and recyclable materials promoting sustainability with the aim to ensure high environmental performance by reducing emissions and waste. People and ethics promote high ethical and professional standards in addition to respecting human and labour rights and the health and safety of the workers. Forests and land use consists of verifying the origin of the wood and fibre and procuring these only from legal and acceptable sources. Stora Enso requires a forest certification from all the lands used to supply wood and fibre for the company. Important aspect in this category is also sustainable forest management with the purpose to conserve biodiversity. (Stora Enso Global Responsibility Policy 2013, 1-2)

As one can see, Stora Enso global responsibility categorization somewhat follows the three theoretical dimensions of corporate social responsibility (economic, social and environmental) presented in the second chapter. Considering the environmental perspective of this study, the category environment and efficiency might be the most relevant. However, there are also important aspects from the other two categories, for example, sustainable fibre sourcing in the forests and land use category and as well supplier contract issues from the people and ethics category.

Like mentioned earlier, each category of global responsibility and their targets are measured with key performance indicators. Key performance indicators assist organization to define and measure the progress towards organizational goals, i.e. key performance indicators are quantifiable measurements that reflect the critical success factors of an organization (About money, 2014).

Like seen in figure 4, key performance indicators for environment and efficiency are the amount of carbon dioxide emissions, material efficiency and process water discharges. Of course, Stora Enso’s own production operations and the development of cleaner and more efficient processes play a major role in environment and efficiency performance, but still, understanding the significance of the whole value chain is important for the company. When it comes to the purchasing function, supplier code of conduct and audits in the supplier facilities are a significant method for implementing environmental responsibility. (Stora Enso global responsibility report 2013, 55) More detailed information on this matter will be provided in the chapter 3.2, responsible purchasing.

Stora Enso's environmental responsibility is mainly based on the environment and efficiency- responsibility category presented briefly in the previous chapter. Company's environmental responsibility is built upon 3 main factors: reducing carbon dioxide emissions, improving material efficiency, and process water discharges which are monitored on a quarterly basis. Sustainable forestry is also one of the key issues for Stora Enso's environmental responsibility implementation. (Stora Enso global responsibility report 2013, 55)

Below is presented the total carbon footprint of Stora Enso in 2013 amounting to about 11 million tons of fossil carbon dioxide emissions. What is significant about the figure in the perspective of this study, is that over half of the emissions are caused along the value chain and direct emissions from production are only one quarter of all the emissions. Therefore it's extremely important for the company to engage in reducing the emissions along the whole value chain, although it's much harder as it involves so many factors, including transportation and further processing of the products by customers. Stora Enso targets a 35 % reduction in the carbon dioxide emissions by the end of year 2025, although this does not cover the indirect emissions along the value chain. (Stora Enso global responsibility report 2013, 55)

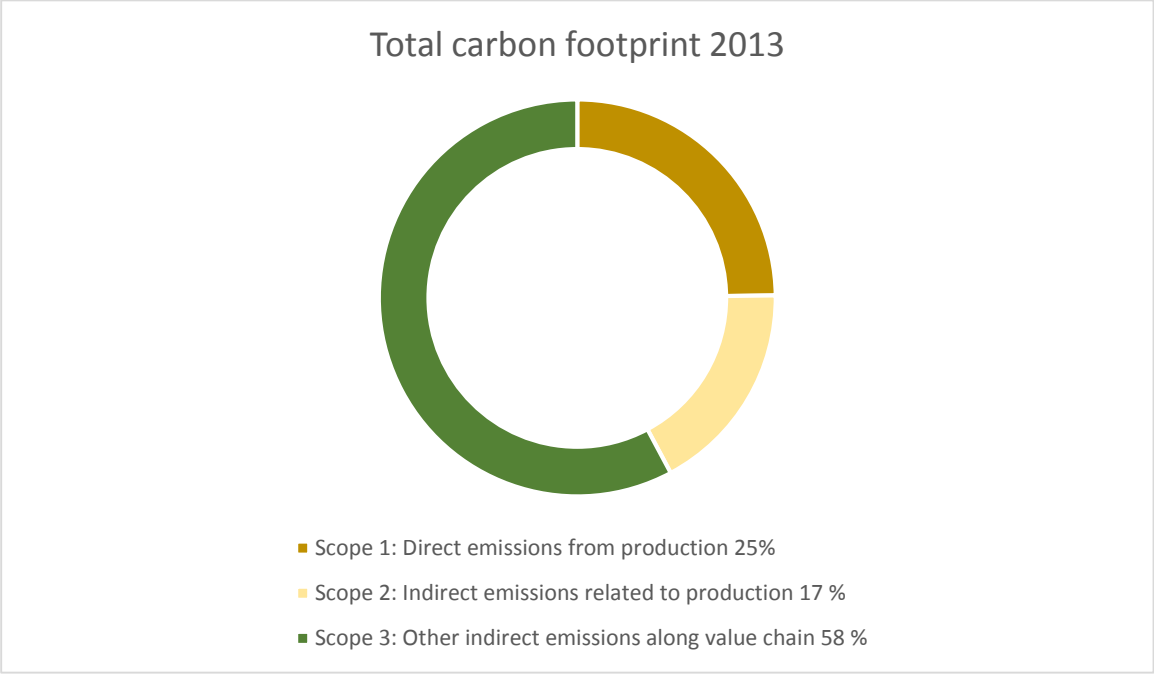

Figure 6. Stora Enso total carbon footprint: 11,21 million tons of fossil carbon dioxide equivalent (Stora Enso, 2013b)

Environmental management systems and certification are an essential part of corporate responsibility in Stora Enso. According to the interviewee,

> *"Environmental management system ISO 14000 is in use in Stora Enso, among other management systems"*

In fact, all of Stora Enso's pulp, paper and board production units are certified according to ISO 14001 environmental management system standards among other certificates, such as quality management system ISO 9001, as well (Stora Enso, 2014d). This is an important starting point for environmental responsibility as environmental management systems build the foundation for proactive environmental actions and ensure that all the operations are in line with environmental laws and regulations.

3.2 Responsible purchasing

Stora Enso purchases a wide range of products, materials and services. Fibre sources, such as wood, pulp and paper, form about a half of company's raw material costs. Other direct and indirect materials sourced include chemicals, fuels, spare parts etc. and as well IT-, logistics-, and maintenance services. Stora Enso's sourcing network ranges from small scale firms into large multinational companies and company's strategy is to build long-term relationships with suppliers based on collaboration. (Stora Enso global responsibility report 2013, 19)

3.2.1 Supplier code of conduct

Stora Enso's supplier code of conduct defines the minimum standards that Stora Enso requires from its suppliers when doing business with the company, in addition to all laws and regulations (Stora Enso supplier code of conduct 2014, 1). Code of conduct applies to all Stora Enso procurement operations around the world offering practical guidance and defining what kind of behavior is acceptable from the supplier and what is not (Stora Enso global responsibility report 2013, 19).

A number of things, such as management systems, human & labour rights, and wages & working hours in addition to environmental issues are imposed on the code of conduct. According to the CoC, supplier shall adopt a systematic approach to asses, mitigate and manage risks related to environmental issues, among other things. Supplier should also set measurable performance targets and to continuously improve performance. (Stora Enso supplier code of conduct 2014, 1)

Supplier is required to obey all environmental laws and regulations and assign responsibility for environmental issues in the organization and also work proactively to prevent environmental emergencies from happening (Stora Enso supplier code of conduct 2014, 1). Code of conduct ensures that all suppliers follow regulations and also protects Stora Enso from liability in case of emergency. Code of conduct forces suppliers to develop their operations as stated, or otherwise they'll lose the business.

3.2.2 Supplier relations

For Stora Enso, responsible purchasing means ensuring that sourcing function is in line with corporate purpose and values (Stora Enso global responsibility report 2013, 19). The interviewee states:

> *"We do, at this stage, not have any specific references to environmental targets in purchasing other than the company's overall target: "do good for the planet and the people"."*

Thus, corporate purpose and values form the foundation for all the corporate actions, including purchasing activities. Specific environmental targets for purchasing have not been set, but purpose and values define the broad guidelines by which procurement is implemented. As there are not any specific environmental targets set for purchasing, the direct environmental impacts of purchasing are not measured in the organization, according to the interviewee,

> *"Today not in a structured way, and not measured"*

More importantly, integrating sustainability into purchasing processes is in the core of responsible purchasing in Stora Enso. The key element in this is supplier selection and following supplier performance by supplier training, assessment and auditing (Stora Enso global responsibility report 2013, 19)

The most important supplier selection criteria in Stora Enso are still cost and risk management. According to the interviewee,

> *"Once a supplier upholds the base requirements in environmental certification, hygiene certification, corporate social responsibility etc, it is down to cost and risk. If those also are even, environment is decisive."*

Accordingly, supplier selection can be seen as a formalized process in Stora Enso, where supplier need to fill the contractual requirements defined for the supply contract, including the requirements of a supplier code of conduct. Supplier becomes qualified once it fills all the base requirements, and after that the selection is down to cost and risk management, like the interviewee points out. If costs and risk are even between suppliers, then environment becomes a determining circumstance.

Even though environmental responsibility is an important matter for Stora Enso, it is not the most decisive factor in supplier selection and has not affected purchasing decisions significantly. The interviewee commented that environmental responsibility

> *"Have not had a strong impact on purchasing activities as such. Not in the way we choose suppliers. Environment certification is a "stop or go". We make sure the suppliers are certified according to ISO 14000 or similar. If they are not certified, we audit them. If not we cannot buy from them. This is not negotiable."*

This supports the hypothesis that supplier selection is kind of a formalized process where suppliers need to have all the required certificates, such as environmental management systems (e.g. ISO 14000), and fill all the other defined supplier criteria and requirements. Once supplier fills all the requirements, it can reach a contract with the company and vice versa. Environmental responsibility is still not highlighted in supplier selection and is only one factor among others, cost and risk being the ultimate decision factors.

Supplier auditing is one of the most used methods in Stora Enso to ensure the supplier performance and responsible behavior. Via auditing its suppliers, Stora Enso can identify a list of possible non-conformances with the supplier code of conduct and then define corrective action plans and specific schedules for each improvement for the supplier. (Stora Enso global responsibility report 2013, 20) This way it can develop

their suppliers towards more responsible behavior and ensure that the minimum level of standards and responsibilities are met. As the interviewee states,

> *"Suppliers are audited on a semi regular basis. Supplier in risky areas more often. An appendix covering environmental responsibility and sustainability (and other topics) is included in all agreements."*

For contractual purposes and to protect Stora Enso from liability, the company has composed a set of responsibility requirements for all the suppliers, like the interviewee mentions above. Audits conducted on supplier's premises aim to ensure that the conditions in the supplier code of conduct are duly met (Stora Enso global responsibility report 2013, 19). Like the interviewee mentions, audits are conducted on a semi-regular basis, depending also on the country of the supplier and the nature of its operations. For high-risk identified suppliers Stora Enso targets to cover 75 % of the value of the purchases by those suppliers. (Stora Enso global responsibility report 2013, 20).

Stora Enso also uses supplier's self-assessment in addition to auditing to evaluate and monitor supplier actions. All new suppliers need to perform these self-assessments which include questions relating to environmental performance, ethical business practices etc. Stora Enso also launched a new IT-tool in 2014 for the purpose to help identify, categorize, assess and monitor their suppliers. (Stora Enso global responsibility report 2013, 20).

In addition to auditing, any specific measurements are not used in Stora Enso to follow supplier performance. The interviewee notes that

> *"As long as they have and maintain their certification nothing is done, except checking they still have the certificates. They do not have, or loose the certificates, we audit them."*

The role of environmental certificates and management systems is clearly emphasized on company's purchasing management and environmental responsibility. Suppliers are required to have all necessary certificates and fill the supply requirements to become a supplier and their actions are monitored via auditing. Supplier auditing is an essential method for Stora Enso to track their suppliers' performance including environmental responsibility.

3.2.3 Recycling, local sourcing & personnel training

Stora Enso uses recycled paper as raw material in number of their mills. In 2013, recycled paper accounted for 28% of company's total fibre use making Stora Enso one of the Europe's largest single recycled paper user. Stora Enso also sources recycled paper from nearby local sources to minimize transportation distances and related costs and the environmental impacts of these operations. (Stora Enso global responsibility report 2013, 21) Both of these methods, recycling and local sourcing, are significant part of sustainability and corporate environmental responsibility. Although, local sourcing is possible only to some degree of purchasing, it is an efficient way to reduce the environmental impact of purchasing where applicable. The concept of recycling was discussed in the theory part of this study, showing its essential status on overall sustainability issues, not just environmentally responsible procurement.

Training of purchasing personnel is also important for Stora Enso to ensure the success of responsible procurement. Purchasing personnel is being trained on supply chain responsibility issues through group-training sessions as well personally on a one-to-basis. A new e-learning tool has also been developed to further improve the training of responsibility issues among purchasing personnel. (Stora Enso global responsibility report 2013, 20) Training of purchasing personnel is essential operational level method for implementing environmental responsibility in procurement. Through sufficient training on responsibility issues, purchasing personnel have the knowledge to act accordingly and responsibly and excessive misunderstandings can be avoided.

Consequently, based on the interview with the purchasing manager and other material, Stora Enso, like many other companies, does still not employ a specific green purchasing strategy. Company did not have any specific environmental targets set for purchasing neither did it follow the direct environmental impacts of purchasing in a structured way which are the foundation for green purchasing strategy. However, company's overall purpose "do good for the planet and the people" defines broad guidelines by which all corporate actions, including purchasing, should be implemented. Company was one of the Europe's largest single recycled paper user and utilized local sourcing in some of its materials.

Still, it became evident that the concept of environmental monitoring, which was presented in the theory part, is emphasized in Stora Enso's procurement instead of

specific green purchasing strategy. Supplier auditing, certifications and environmental management systems are the core of environmentally responsible procurement in Stora Enso. These methods are used to ensure the environmentally responsible behavior of all suppliers and that the company follows all essential laws and regulations. Supplier code of conduct is also an important aspect for Stora Enso to manage the responsible behavior of its suppliers. Due to this environmental monitoring strategy, the impact of environmental responsibility on purchasing has not been strong and has not brought any specific requirements for purchasing or supplier selection. But like Vachon (2007) stated, these environmental monitoring methods are more of a risk management tools for a corporation rather than a competitive weapon in green purchasing.

However, when analyzing a large multinational manufacturing corporation, one have to remember that procurement is only a function among many others. In this case, environmental responsibility implemented in the production facilities and the reduction of emissions caused by production among many other issues might be more important concerns for the company than to build a specific corporate green purchasing strategy. Therefore specializing in the procurement context provides only a brief insight to one of the corporate responsibility areas in Stora Enso, but in this procurement context, company's environmental responsibility is built upon more of a risk management approach instead of proactive environmental programs.

4. CONCLUSIONS

Corporate social responsibility is an ever-evolving concept. Its roots are in the early 1930's and since then, the concept has faced significant growth and its importance in modern business life has risen to a whole new level. Today, especially large multinational companies employ extensive corporate social responsibility programs guiding each sector of their corporate actions.

The dimension of environmental responsibility was the main focus of this study. This dimension was viewed especially in the context of procurement, and the main objective was to identify environmentally responsible procurement practices. Several concepts regarding this topic were discussed, such as green purchasing, environmental monitoring, environmental collaboration, environmental management systems, environmental technologies and recycling and reusing materials.

Green purchasing is an overall term referring to environmentally conscious and responsible purchasing practices that can vary greatly depending on the corporation and the industry. The main green purchasing practices identified in this study and the allocation of responsibilities between purchasing firm and the supplier were presented in figure 4. Environmental management systems, such as ISO 140001, form the foundation for environmentally conscious actions for both the purchasing firm and the supplier. Other two main environmentally responsible purchasing practices identified for the purchasing firm are recycling and reusing purchased material. By these actions, purchasing firm can act sustainably reducing waste and also, procurement costs.

Suppliers are also in a key position when purchasing firm involves environmentally responsible procurement. Suppliers should also be certified according to environmental management systems, such as ISO 14001, ensuring the solid base for environmental responsibility. In addition to this, purchasing firm employing a green purchasing strategy, can take the use of environmental technologies into account when selecting suppliers. Two main categories of these technologies were presented; pollution prevention technologies and pollution control technologies.

Based on the empiric information from the case company Stora Enso, the existence of environmental management systems, such as ISO 14001, was a significant factor in environmental responsibility and the concept of environmental monitoring rose to one

of the key practices in environmentally responsible procurement. This concept included supplier assessment and auditing and supplier certification with the aim to ensure the responsible behavior of suppliers along the supply chain. Stora Enso employs supplier code of conduct to manage their suppliers' responsible behavior and also utilizes recycling and local sourcing in some of its operations, but still, the environmental monitoring, supplier auditing and certification form the majority of its environmental responsibility in procurement.

Consequently, a number of environmentally responsible procurement practices were identified. The second objective of this study was to perceive how environmental responsibilities are divided between supply chain partners in procurement. Figure 4 also visualizes this matter. It is worth noticing, that environmentally responsible procurement demands actions from both the purchasing firm and the supplier: purchasing firm can recycle and reuse purchased materials reducing waste and the supplier can employ pollution prevention and pollution control technologies to reduce emissions. Both parties need to also employ environmental management systems, such as ISO 14001, which form the foundation for environmentally conscious actions. So, successful environmentally responsible procurement requires the participation and environmental collaboration of both parties, which was also discussed in the text.

Ultimately, the responsibility is still with the purchasing firm to ensure the responsible behavior along the supply chain. For this purpose, purchasing firm can monitor its suppliers via auditing and certification which was clearly emphasized in the case company's strategy. Even though successful environmentally responsible procurement is built upon collaboration among the supply chain partners, environmental monitoring works as a risk management method for the purchasing firm ensuring the responsibility throughout the supply chain.

The third objective was to find out, how environmental responsibility have affected case company's procurement and what requirements has it brought to the company. However, case company Stora Enso did not have a specific green purchasing strategy or specific environmental objectives for purchasing. Therefore, the impact of environmental responsibility on procurement stood rather low and in addition to fulfilling all the contractual requirements, e.g. supplier code of conduct, and having the necessary certificates, such as environmental certificate according to the

environmental management system ISO 14001, environmental responsibility had not brought any specific requirements for purchasing. Purchasing cost and risk management were the key criteria for purchasing decision making.

Consequently, this study has analyzed environmentally responsible procurement practices in a single case-company in forest industry. Number of environmentally responsible procurement practices were identified, but for future studies, the context could be broadened to consider other industries as well, or at least multiple case companies from the same industry to reach more inclusive results.

Also, the social dimension of responsibility could be taken into account in addition to environmental dimension to reach more comprehensive overview on the corporate responsibility concept. Like Hoejmose & Adrien-Kirby (2012) state in their analysis of socially and environmentally responsible procurement literature, the closer examination and comparison of both social and environmental responsibility together is needed as it has left for a rather small attention in the literature. All in all, the field of corporate responsibility is very fruitful considering the future research agenda and therefore, there are multiple possibilities to start exploring the concept.

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APPENDIX

Appendix 1. Interview questions for one of Stora Enso's divisions' purchasing manager

Strategy, process and background

1. Can you describe briefly corporate strategy objectives and targets for purchasing?
2. Is there some kind of an environmental management system (such as ISO 14000) in use in your company?

The implementation of "green" purchasing

3. Are the environmental impacts of purchasing taken into consideration along with economic impacts in the purchasing strategy? How are these measured?
4. How do you involve environmental responsibility and sustainability in your purchasing activities? (e.g. waste reduction by recycling or reusing materials...)
5. Have environmental responsibility had a strong impact on your purchasing activities? How has it affected and has it brought new requirements?

Supplier selection

6. What are the most important supplier selection criteria in your division? Is there any environmental criteria?
7. How are supplier performance followed? What about their environmental performance?