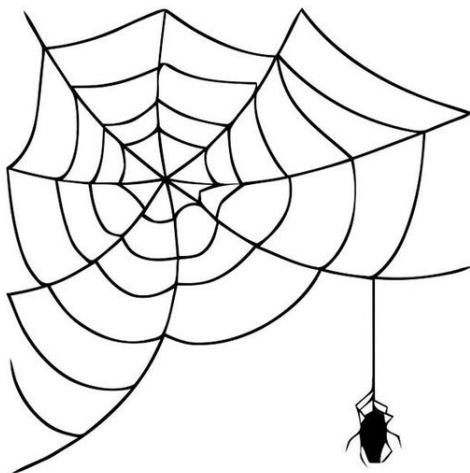




UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

A Spider on the Web?

- Important Factors when Coordinating Environmental
Management in Product Chains



University of Gothenburg
School of Business, Economics & Law
Department of Business Administration
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Sustainable Business Administration

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ABSTRACT

Master Thesis in Environmental Management. University of Gothenburg: School of Business, Economics and Law, Fall 2010

Title: A Spider on the Web? - Important Factors when Coordinating Environmental Management in Product Chains

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Description of the Problem: A local environmentally good decision can have a large negative impact elsewhere in the product chain, therefore companies need to have an environmental supply chain management approach and cooperate with all companies in the product chain. Lately the role of the *environmental managers* has gained more attention in the environmental debate and environmental literature focus on *environmental entrepreneurs*. We want to contribute by our study, by searching for what is needed to be successful in environmental management, but also contribute by helping to portray this job position. During the bachelor thesis we encountered both fear and unwillingness to share working methods which got us further interested about the problems of coordinating environmental management regarding those actors that we interpret has the most influence over environmental management in product chains.

Purpose of the Study & Research Question: Our purpose is to investigate and describe how actors in the public eye (APE) manage the coordination of environmental management. We try to see the big picture to find if there is an approach towards individual actors or is there an approach towards a coordinated web. Our research question is: *Which factors are perceived as important when coordinating environmental management in product chains?*

State of Knowledge: The state of knowledge is divided into six categories: *The big picture* shows how the environmental field is broad and rather unclear. *The individual* focus on the environmental individual and manager as well as required skills. In *communication and language* it is described that there are different languages used, that concepts can have different meanings and how communication can facilitate information sharing. *Processes and networks* focus on information exchange and how to overcome process difficulties. Followed by *the chain perspective* which states the importance of a supply chain management approach.

Lastly, in *reflection of the state of knowledge*, we conclude that there is not one single actor instead a web of life cycle coordinators in the product chain.

Methodology: The study is based on interviews with company representatives from the two steps in the fluff product chain that were most life cycle active and characterized as APE companies. The method used for this research is based on qualitative in-depth interviews with environmental representatives working at these companies about their work and experiences. We also conducted an analysis of literature and scientific articles.

Limitations: This study focus on life cycle coordinators, working with environmental management in product chains at companies identified as APE. We only study two steps of the product chain. Our study is proceeding from the coordination of environmental management in one product chain, we do not have a wide general understanding of the complexity working with many different product chains.

Empirical Findings, Analysis & Conclusions: The empirical findings are divided into two themes; background and individual characteristics as well as focus on the life cycle coordinators role in a larger perspective. The analysis is based on the empirical findings and the state of knowledge and divided into six themes; background, view of themselves and their role, perceived drives vs. struggles, perceived critical factors for coordination of environmental management, networks and communication and finally the chain perspective.

Success in the coordination of environmental management can be seen as a product of a number of factors including personal attributes, background, company circumstances and broad industry knowledge of the leader and social circumstances. We establish that life cycle coordinators are fighting for their cause and feel that the environmental goals are in opponent of the actual aims of the business. Top management support is vital, also company knowledge, interpersonal skills, committed and properly educated personnel as well as broad knowledge of environmental issues are critical factors for the coordination of environmental management. We establish that networking over traditional boundaries is of high importance for functioning environmental management in product chains. We conclude that environmental management is the combined work of many different people and departments who have ability to influence the supply chain, not just one single actor. Companies will search for environmental generalists. We establish there is a difference between internal and external coordination. This study shows that there is a progressing approach for a strengthened coordination web in the product chains.

PREFACE

Our work would not have been possible unless we had the opportunity and access to interview staff from the companies that we identified as influential in environmental management in product chains. We would like to thank Susan Iliefski and Ellen Riise from SCA, Åsa Domeij from Axfood, Janne Krantz from Willys, as well as Mikael Robertsson from Coop and Catrin Björkman from Konsumentföreningen Väst. Thank you for taking the time to meet with us and provide input to our thesis.

We would also like to give many thanks to our supervisor Henrikke Baumann at Environmental Systems Analysis at Chalmers for your commitment and support of our work and essay writing.

Gothenburg, 2011-01-13



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LIST OF ABBREVIATIONS

Below is a list containing the abbreviations used in this essay. The abbreviations are used to facilitate understanding.

APE	Actor in the Public Eye
CR	Corporate Responsibility
CSR	Corporate Social Responsibility
EMS	Environmental Management System
ESCM	Environmental Supply Chain Management
GSCM	Green Supply Chain Management
LCA	Life Cycle Assessment
LCT	Life Cycle Thinking

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1. INTRODUCTION

Presented here are a description of the study focus and an introduction to the problem area. Next is an introduction of the bachelor thesis followed by the purpose of the master's thesis as well as a structure of the report.

In the fall of 2009 we conducted our bachelor's thesis regarding environmental management in a fluff product chain. The difficulties we encountered during the process got us interested in knowing more about the problems of coordinating environmental management between actors in a product chain. We have encountered both fear and unwillingness to share working methods and approaches, especially from some of those actors that we interpret has the most influence over environmental management in our studied supply chain. We want to contribute with our studies, by searching for what is needed to be successful in environmental management, but also contribute by helping to portray this job position.

Recently we have found that persons holding jobs as environmental managers have increasingly gained attention in the environmental debate. They are portrayed in different magazines (Åsa Domeij, MiljöAktuellt 2010-08-11 and Eva Vitell, Civilekonomen 2010-10-19). Sustainable development has been defined in the report Our Common Future by the World Commission on Environment and Development as *“to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”* (Brundtland, 1987, p. 8). The United Nations has recognized the importance of a sustainable development and titled this decade (2005-2014) as the United Nations Decade of Education for Sustainable Development. The aim is to integrate sustainable development into all aspects of education and learning as well as develop the attitudes and the knowledge to make enlightened decisions about the future. (UNESCO, 2010)

This shows that the importance of education and personal engagement has been recognized and therefore we find it interesting to focus on finding out more about, and study, the working environment for personnel within the environmental department of an influential company within a given product chain to establish what it requires to work as lifecycle coordinators at a company. We want to establish if they work alone as a spiders or if they work together in a coordination web.

1.1 Introduction to the Problem Area

To achieve successful environmental supply chain management (ESCM) actors in product chains need to work with environmental issues regarding both their own company as well as

with the other actors in the product chain. Such coordination is necessary, because otherwise a local environmentally good decision can have a large negative impact elsewhere in the product chain (Westkämper et al., 2000). In our bachelor thesis “Fluffets väg”, about environmental management in a diaper product chain, we established that there is a significant distance between the actors that have an larger ability to influence environmental management in the product chain and the actors that actually are the ones’ that presents the most environmental burden. We hold that it is very important to overcome this distance to get an effective ESCM in the entire chain and thereby positively affect the environment. In order to do so, actors in the product chain need to collaborate and communicate in some way. This work is defined by three parts (figure 1, below); a) concern for the environment and b) the ability to coordinate environmental management c) in a product chain.

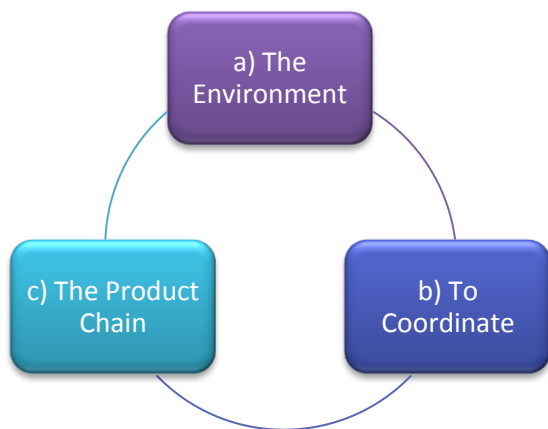


Figure 1. Illustration of the three parts that coordination environmental management in a product chain consists of

1.2 Introduction of our Bachelor Thesis

The bachelor thesis is based on a conceptual product chain for a diaper, with regard to the fluff a children’s diaper contains. The product chain includes the following actors (figure 2, below): Placed first in the product chain is a raw material and pulp producer. Secondly, we have a fluff producer. Thirdly, there is a converter followed by a diaper distributor. Furthermore, in the chain, via the distributor, the product is purchased by consumers, that is, parents of young children. The last phase in the product chain is the final handling of the diaper, which is represented in the chain by a recycling and waste company. We choose not to include transportation, since we only account for a general conceptual product chain with a focus on environmental management, and we believe that transportation between the players is not relevant to our purpose.

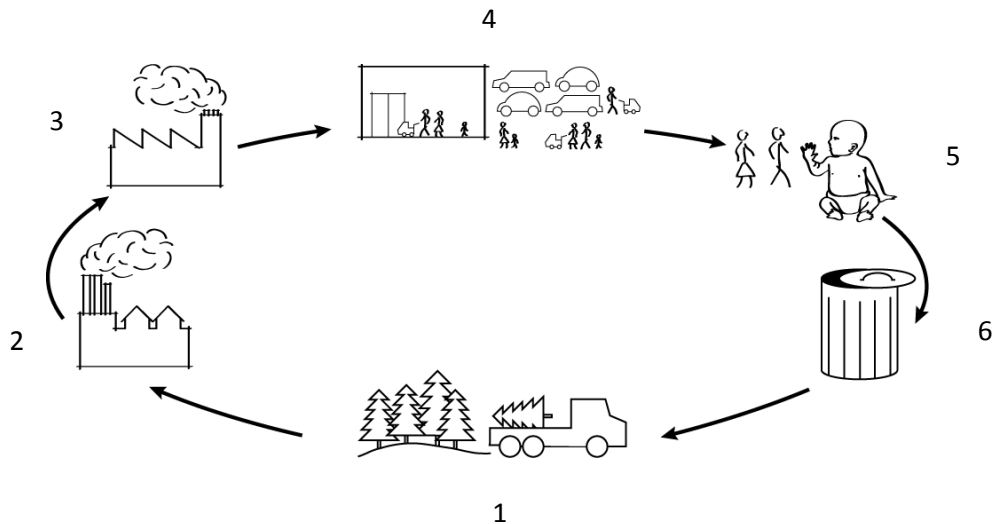


Figure 2. Illustration of the conceptual product chain, and its actors, on which the bachelor thesis is based

In the studied product chain we distinguished the converter as a focal company with the ability to influence other actors in the product chain (Seuring & Mueller, 2008, referring to Handfield & Nichols, 1999). The distributor does not have an equally significant role as a focal company; however, the distributor differs significantly from the other actors in the product chain (with the exception of the converter). This allows us to identify both the converter and the distributor as focal companies. Based on this, our study differs from the studied literature, since the literature approach is based on *one* focal company in the product chain, and we distinguish two firms as focal (Nilsson et al., 2010). We identified actors who have greater potential to influence other actors in the product chain and found that these actors with control in terms of influence and dependence in the product chain is the visible actors with a brand that is known to the public. We therefore define actors with greater opportunities to exercise influence with regard to environmental management in a product chain as visible actors or *actors in the public eye* (APE).

Figure 3 (below) shows our study's conclusions: where we have identified that the greatest environmental impact occurs, how environmental management takes place and is coordinated in the product chain, and which actors are distinguished as APE. The greatest environmental load results from the behavior and attitude as well as in manufacturing. Relationships of influence and dependence is illustrated by the blue line; the fluff producer can put demands on the raw material and paper producer; the converter can impose terms and conditions on the fluff producer and on the raw material and paper producer; and the distributor can exercise influence with respect to all three actors back in the product chain. Consumers have the potential to influence other actors in the product chain, particularly over the converter and the distributor, but seem at present not aware of this potential, as illustrated by the dotted blue

line. Environmental demands placed along the entire product chain are the continual improvement through documented environmental management system (EMS). The dotted green line shows the effects that may result from information exchange; the raw material and paper producer affects the fluff producer and the converter through knowledge of the product; the converter affects the distributor, and to some extent the consumers through product information; the distributor may influence by educating consumers about the product and product selection. Based on these dependence and information conditions, we have identified the converter and the distributor as those with the greatest opportunity to exercise influence in terms of environmental management and therefore as APE. Although many actors stress the importance of communication and cooperation for effective environmental work not all actors are included. Figure 3 clearly shows how the final phase of management is not actively included and that the fluff producer's role is unclear in the environmental management in the product chain. It is evident that the environmental management is not performed throughout the product chain and the latter part of the actors in the chain to some extent has been neglected.

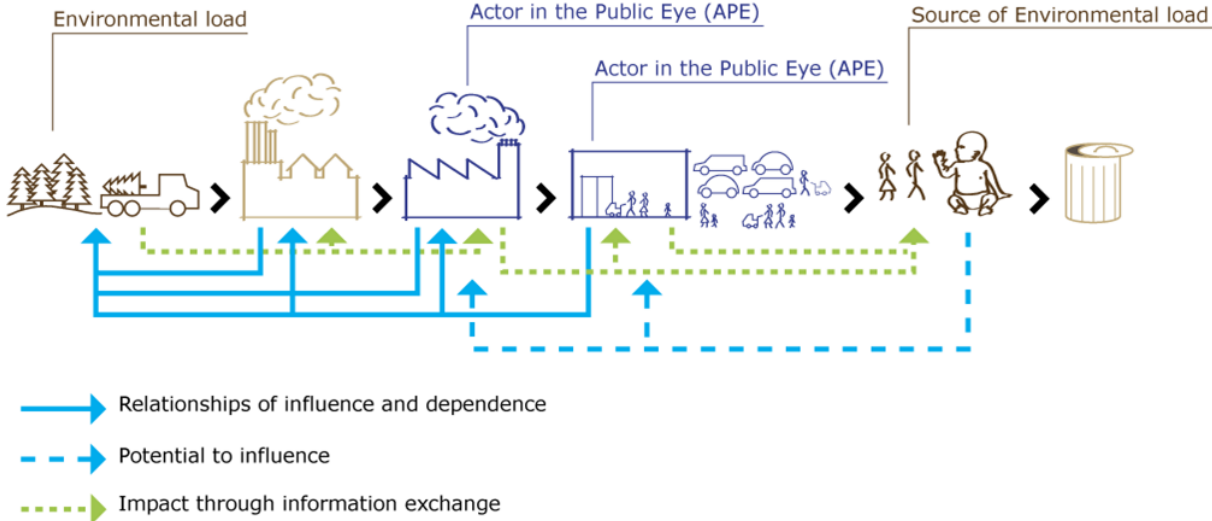


Figure 3. Illustration of which actors is defined as APE and where most environmental load takes place

1.3 Purpose of our Master Thesis

Focus of this master's thesis is to study how actors in the public eye (APE) manage the coordination of environmental management, both within their companies and with other actors in the product chain. Existing literature emphasize that there is only *one* company that

has a greater potential to influence the production chain and is in direct contact with the customers, called the *focal company* (Seuring & Müller, 2008, referring to Handfield & Nichols, 1999) and Schary & Skjøtt-Larsen, 2001), and it is thought that this company has responsibility for that subcontractors fulfill stakeholders' requirements (Dyckhoff et al., 2004). Since we established that there were two “focal” companies in the fluff product chain, we find it interesting to investigate these companies with regard to the job of environmental coordination in our master thesis. Literature about the combination of life cycle coordinators and environmental management in product chains is almost non-existent. By our study we want to contribute with knowledge to this emerging field.

We want to establish what combination of individual characteristics, educational background and experience that determine the lifecycle coordinators success within the company and in the product chain. We want to investigate if they work alone as a spider or if they work together in a coordination web. Based on this study, we hope to establish what is required to work as a lifecycle coordinator at a company. This might allow us to distinguish what combinations of features that gives the lifecycle coordinator possibilities to influence the environmental work in the product chain and retrieve an authority position. Aim of our study is therefore to clarify the profession that a lifecycle coordinator has at a visible firm in a product chain. In this master thesis, if possible, we want to conceive if there are any tendencies or needs towards a new and different line of work within the environmental profession. We try to consider the links and see the big picture; is there an approach towards the life cycle coordinators or is there an approach towards a coordinated web.

Our research question is:

Which factors are perceived as important when coordinating environmental management in product chains?

1.4 Structure of the Report

This master's thesis consists of eight chapters in total. Chapter one includes an introduction to the problem area as well as to our bachelor thesis, an explanation of the purpose of the study and finally this structure of the report. Chapter two, the state of knowledge, consists of six sub sections which include the big picture, the individual, communication and languages, processes and networks, the chain perspective as well as a reflection of the state of knowledge. Methodology, chapter tree, includes our approach and our collection of raw data

as well as secondary data. After that, in chapter four, we evaluate the study. The four sub sections are; methodology problems, criticisms of the sources, reliability and validity. Chapter five is divided into two themes; one focus on the individual for example background, drives and characteristics and the other one focus on how they view themselves in the organization and in a larger perspective. Under each theme there is a sub section about each interviewed actor. The analysis is found in chapter six and consists of the six themes; background: job experience and education, view of themselves and their role, drives versus struggles, critical factors for coordination of environmental management, networks and communication and the chain perspective. Thereafter follows chapter seven that includes our conclusions, based on the empirical findings and the state of knowledge, followed by our final comments. And last, chapter eight that consists of our concluding discussion.

2. STATE OF KNOWLEDGE

The literature is divided into five sub sections which represent different directions and include; the big picture, the individual, communication and languages, processes and networks as well as the chain perspective. Additionally there is a sixth section with our summary and conclusion of the state of knowledge.

2.1 The Big Picture

The field of management in itself is fragmented and lacks agreement about which research is relevant research or not, which makes the young discipline of corporate environmental management even more fragmented and spread across many different disciplines, because it also contains the broad environmental issues. (Dobers et al., 2001) To work with environmental issues often contain a cradle to grave approach and to consider the environmental impact throughout the entire life cycle of a product, by Rex and Baumann (2008), pointed out as a necessary way of obtaining more sustainable production and consumption patterns. By this holistic approach actions can be taken where they are most needed along the product chain (Rex & Baumann, 2008). It seems there is a perception that it is important to know a great deal to work with environmental issues. An expression of this could be the fact that environmental personnel experience a need to supplement their educations with additional courses. (Johansson, 2008)

Environment jobs are described by Baumann et al. (2005) as a relatively new phenomenon in the labor market. Those who take these jobs are often struggling to gain support for environmental change in the companies and organizations they work for. Often is the content of work not obvious, but rather the subject of negotiation. (Baumann et al., 2005) In the same time Baumann et al. (2005) phrase how there is no specific learning path to environmental jobs, neither is there any clear career path for them. The lack of specified educational background has lead to people with different backgrounds competing for the same job position. There are those who have had various environmental positions within corporations for a long time, and according to Baumann et al. (2005) these people are described as holding competences in addition to their environmental expertise which is helping them to cope with the challenges that come with their jobs. Hroch (2002) finds that the dominating metaphors used by environmental managers for describing their relationship with other business areas is often regarded as a permanent source of conflict or as restricted actions. Metaphors often used are, in descending order; struggle and fight, acting within limits, journey with obstacles, balance between two poles and applying the brakes. The relationship are mostly described as

two diametrically opposed sides where environmental management often is regarded as opponent to the actual aims of a business. Environmental managers often describe their own role within the business as fighters. (Hroch, 2002)

2.2 The Individual

The concept of environmental entrepreneurs is wide spread and has several names, such as i.e. ecopreneurs and there are also many different definitions on the subject. Scharper (2002) refer to Pinchot (1985) and describe how those persons, usually within large companies, who drastically bring about change in the company could be called intrapreneurs. Also Hostager (1998) refers to Pinchot (1985) who defines environmental intrapreneurship as persons or teams within the organization that create profitable products out of environmental ideas. Gibb (1996) also refer to Pinchots (1985) term intrapreneurship and continue by explaining that entrepreneurs can be found within both private and public organizations as well as in all sizes of organizations. While referring to Caird (1993) Gibb (1996) describes that there are a number of different behaviors to look for when identifying an intrapreneur i.e. they are actively seeking new opportunities, taking initiatives, enjoying uncertainty, taking risks and own decisions, having an ability for problem solving, being committed and flexible as well as having the ability to persuade others.

The term ecopreneurs, is used by Schaltegger (2002), who explains them as those making environmental development within the core business and describes that this could be both individuals and companies. Thus, Schaltegger (2002) state ecopreneurship as entrepreneurs having an environmental lens whilst focusing on personal initiatives and skills of a person or team. Ecopreneurship is defined as value-creation through market-oriented and personality-driven environmental innovations Schaltegger (2002). Other authors that use the term ecopreneurs are i.e. Linnanen (2002) and Pastakia (2002). Volery (2002) instead uses the term green entrepreneurs. Keogh and Polonsky (1998) refer to Drumwright (1994) and point out that entrepreneurship as well as intrapreneurship can be a way to champion environmental concern within the organization and that it can facilitate for changes in both current values and organizational culture. Entrepreneurs are those that are strengthened by opportunities in their surroundings which is why they can be helpful when wanting to change things in order to improve environmental behaviors and impacts (Keogh & Polonsky, 1998). It is usually individuals with a commitment to a vision and an ability to pull that vision of almost by themselves that is called entrepreneurs and there are, according to Keogh and Polonsky (1998), different kinds of commitment. The type of commitment that the entrepreneur has

affects their visions of environmental concerns and of what is seen as important. To conclude, Keogh and Polonsky (1998) point out that organizations that want to integrate environmental concern by the help of entrepreneurial activity will have to identify different possible dimensions of commitment and the links between commitment, entrepreneurship and opportunity-seeking finally matching those with the organizations entrepreneurial activities.

Anderson (1998) focuses on value, attitudes and social embeddedness. It is explained that the rising interest in the natural environment can be seen as a social change which also include a change in values where entrepreneurship is seen as a great way to facilitate this change. Moreover, Anderson (1998) point out that there is no formula for entrepreneurial success, only guidelines; it is important to combine environmental concern and individual value systems as well as to nurture the entrepreneurial motivation so that it become a driving force, both personally and for opportunities to be able to be recognized in organizations. The subject of corporate entrepreneurship is discussed by Lober (1999) who explains that it can be seen as the progress of new advancements within firms but it can also be seen as a way for companies to fight their way forward by the help of different combinations of resources. According to Lober (1999) there are organizational structures that can enhance entrepreneurial activity such as management support by supplying funds and embrace ideas from the employees, ensure they can make their own decisions, apply an structure that encourages employees to act on entrepreneurial opportunities, provide them with time to work on their projects and offer an environment that support activities outside the employees usual job descriptions.

For success in a long-term perspective, companies have to recruit and motivate people who are able to respond to and shape the challenges of the future. Individuals for these jobs need to have the capacity to create competitive advantages from opportunities presented by changing markets, possess a desire to learn from customers, consumers, suppliers and colleagues, and also hold the ability to build and influence long-lasting and effective partnerships. (WBCSD, 2005) Skilled people are becoming business most valuable resource, skills as for example leadership, team-working, negotiation and problem solving, can be built through training in social and environmental dilemmas. The paper of WBCSD (2005) declare that sustainable development knowledge and skills should be spread widely across the organization using a variety of approaches, thus it must be understood and accepted by as many employees as possible. But, this does not imply a uniform learning. Specialist responsibility requires specific training, thereby different business functions need to have the corporate sustainability vision translated into their functions language and culture. In the same time as a common

perspective is considered of great significance. (WBCSD, 2005) As the sustainable development has moved inside the business mainstream, also the responsibility for managing social and environmental concerns has become an important business function. The persons having positions as sustainable development specialists are expected to act as agents of change. They must develop structures, systems and ways of working and also personal values that will maintain with the organizations sustainable objectives. Further, these sustainable development specialists are described as having the role to encourage others in the company, and to some extent be enthusiastic agents of change. (WBCSD, 2005)

Also D'Amato and Roome (2009) recognize the importance of agents of change and describe them as individuals or organizations that operate in an environment with a high level of uncertainty and support new knowledge and who connect to other actors and share information due to their work across different boundaries. For project leaders a central characteristic is the power they possess. A powerful leader is described as holding significant decision-making responsibilities, organizational authority and positioned high up in the hierarchical level (Brown & Eisenhart, 1995) and having characteristics which will help obtain resources to the team in competition with other functions (Brown & Eisenhart, 1995; James & Stewart, 1996). Other characteristics of a powerful leader are motivational skills, interpersonal skills, broad environmental and industry knowledge (James & Stewart, 1996).

Qualities that may lead to respect among team members are also considered important (Brown & Eisenhart, 1995, referring to Clark & Fujimoto, 1991; James & Stewart, 1996). Improved environmental management depends on actions by non-environmental staff that has to be persuaded into actions. Therefore, an environmental executive is someone who's educational background and experience command respect among others. (James & Stewart, 1996) Another critical factor for successful environmental management is that the leader posses a vision, and the ability to create an effective and holistic view which they are able to communicate to others as well as skills to gain others acceptance of the environmental message (Brown & Eisenhart 1995; James & Stewart, 1996). Thus, environmental executives need to be outward-looking, have high communicative and networking skills, receive support across the organization, be capable of managing tension, be business oriented and finally be visionary (James & Stewart, 1996).

Further, James and Stewart (1996) find that most environmental executives see the secret of success in their general management abilities, in company understanding and top-level

support rather than in environmental knowledge. Being an environmental professional is according to Jørgensen and Hagelskaer Lauridsen (2005) to work within the value and business context of companies, a role that also includes taking an active part in the process of the exchange and development of environmental objects and how they are handled. Holistic system thinking and cross-cultural understanding are some of the skills that D'Amato and Roome (2009) referring to Waddock (2007) state it is suitable for corporate social responsibility (CSR) personnel. There are different leadership types described by D'Amato and Roome (2009) one of them focus on verbal and written communication, the importance of two-way communication and that this information is adapted to local framework of the audience. Another one focus on the managers, as role models, for employees and how they should be an example.

In contrast to the focus of many other authors D'Amato and Roome (2009) state that innovation is the product of a combination between top management, executives as well as other teams inside or across organizational limits and that there is no solitary actor or champion that creates this on their own. While referring to Roome (1994) D'Amato and Roome (2009) explain that participation, quality thinking and learning are factors that organizations should support to be able to enhance corporate responsibility (CR). Other important features that organizations should facilitate are systems thinking, the ability to holistic thinking where small problems are view in the broader perspective (D'Amato & Roome, 2009, referring to Roome, 1994; Frankel, 1998).

2.3 Communication & Languages

Johansson (2008) describe how problems arise because job positions within environmental areas are rarely defined, but are more a skill that can be found in professionals with diverse training. Problems emerge when different concepts, for example sustainable development, has different meanings for different people. Thereby Johansson (2008) also notes that there probably are a variety of conceptions of how to work with environmental issues and sustainable development as part of various professional practitioners. External influences are making environmental demands on firms in their own strategic languages and are out of their perspectives according to Russo (2008). D'Amato and Roome (2009) refer to Kerr (2006) and Roome (1994) and point out the importance of good communication, through different stakeholder relationships as a requirement for sustainable development. By referring to Kartz (1982), Brown and Eisenhardt (1995) state that teams which has a shorter history together tend to lack in their information sharing, they argue that this will lead to limited information

exchange which influences the process performance. Team members are gaining information from diverse viewpoints by external communication on a frequent base, Brown and Esienhart (1995) argue that these members will develop a capacity and become more efficient in using information, factors declared as improving productivity and the development process.

It is considered important that the product development teams understand and values the environmental information they receive (Lenox & Ehrenfeld, 1997). The languages of environmentally oriented persons are often foreigner for members of product development, and environmentally oriented persons are typically unfamiliar with product development (Lenox & Ehrenfeld, 1997, by referring to Shelton, 1996). Russo (2008) describes how environmental persons often take their strategic environmental programs as obvious values and for granted. They often use non-business phrases and are somehow failing to communicate this to other parts in the organization. Therefore, according to Russo (2008), the challenge for environmental persons is to find out how to translate environmental issues in the context of their organization. The ability to communicate and to do so across specialized languages that different groups of specialists create is something that Van Kleef and Roome (2007) while referring to Roome (2001) point out is important for individuals that link different communities of practice to relevant networks. The challenge to effectively communicate information is for firms to break down the words of functional groups and create a mutual understanding by an interpretive structure (Lenox & Ehrenfeld, 1997). Also Hens (1998) state that access to accurate information, and to be aware of existing problems and their contexts are of utmost importance for environmental management. Critical for this understanding and of central significance for building a common language is education (Hens, 1998) and training (Lenox & Ehrenfeld, 1997; Hens, 1998) which should lead to involvement and active participation in environmental management by all actors (Hens, 1998).

Greening is by Georg and Füssel (2000) viewed as a sense-making process, where transformation is taking place at organizational members and individuals. Georg and Füssel (2000) treat executives' attitudes and commitments towards the environment as something that will be developing over time as managers engage in changing organizational routines towards environmental improvements. The main idea of this sense-making approach is that people make sense of the organization by inventing new meaning for occurring organizing processes, as to maintain an identity. Sense-making is also explained as an on-going act of communication in which individual's continually are negotiating what is the organizational reality in social interaction. Further, Georg and Füssel (2000) find that individuals interpret,

translate and mobilize ideas to fit within their frame of reference and argue that this is crucial because it points to the accessibility of organizations in taking in environmental considerations and developing them into institutionalized practices. Regarding Life Cycle Assessment (LCA) practices, both the organization and the methodology used is influenced by people's interest and actions according to Rex and Baumann (2008). Also the life cycle coordinators working with LCA are interacting with others within and outside of the organization which influence the firms practice. Thus, by the way people make sense of various situations, and also a firm's historical and organizational context can explain a firms practice. Divergent LCA practices can be explained by individuals sense-making, the work is conducted by core-individuals and their educational background, preferences and actions are shaping the practice. (Rex & Baumann, 2008)

2.4 Processes & Networks

Most areas of industrial ecology is dominated by researchers with a engineering or natural science background, which often are adopting a technocratic approach states Rex and Baumann (2008) while referring to Korhonen et al. (2004) But, life cycle thinking (LCT) emphasis a shift of how problems and responsibilities are handled and requires companies to investigate activities outside of their traditionally boundaries. An understanding of organizational culture is necessary if change is to be successful according to Rex and Baumann (2008) by referring to Heracleous (2001). Barbioli (1999) referring to Stahel (1992) also focus on a shift in perspective and the need for a service economy based on the concept of commuting selling products and instead sell services. And Barbioli (1999) believes that it is the public companies that should guide and lead the way to sustainable development and that their accomplishment should be used as an example and that this knowledge, directly and indirectly, should be used by all private companies as well as the whole economic system.

Halldórsson (2010) describes how it is a fact that the energy and climate era is challenging the nature of business and management activities. Stakeholders are increasingly paying attention to sustainability and energy and having an environmental concern. And Halldórsson (2010) refer to the World Economic Forum (2008) which has identified it as an emerging issue, which means regulatory pressure from governmental bodies such as the European Union as well as pressure from media. Companies face the challenge of addressing sustainability and energy efficiency across the whole supply chain but these supply chain strategies that address the potential implications of these changes are not well understood according Halldórsson (2010). Even though environmental concerns have reached the level of a strategic concern for

corporations, the opportunities from an environmental strategy will not be realized until the organizations are structured to identify them. The history of the corporation will be of relevance for the environmental strategy, in the same time as managers must focus on developing an organizational culture that will encourage a merger of environmental and economic interests in the decision making of its employees. (Russo, 2008)

In companies where environmental strategy is integrated environmental concern will move from a specialized department of the organization into the core of the organizations functional competencies according to Russo (2008). These processes will cause that different roles and departments will be transformed within the organization and those seeking a career in environmental strategy will need to develop relevant skills and a suitable professional path. Russo (2008) is forecasting that firms will search less for an environmental specialist and instead more for an environmental generalist, someone who can phrase environmental issues in a language of finance, accounting and marketing constituents. In the same time as Russo (2008) is predicting that environmentalism will become a necessary component for other business managers. In the future this process will continue and thereby an environmental structure will occur that integrates these skills and there will be a less need for an exclusive corporate environmental department. This function will instead be spread across different departments and the life cycle coordinators will act as agents of internal change. In the process of achieving the most efficient response to environmental demands, the corporate manager has to translate these considerations into the firms' central objectives to make it integrated with the economic decision-making processes. Environmental strategy is a composite of core organizational functions. For achieving an effective strategic response, a firm must push environmental responsibilities to the functional levels where they are best equipped to take care of them. (Russo, 2008)

The environmental design capability is by Lenox and Ehrenfeld (1997) explained as a firms capability to address environmental concerns in product development and the capability to respond to changing environmental demands through the design of products and processes. Organizational learning arises out of the daily interaction among diverse organizational members, each possessing different knowledge bases. The collective intelligence is argued to be able to increase through the expansion of diverse knowledge but only if a suitable level of integration is maintained. The challenge to firms is to develop diverse knowledge resources while maintaining integrative structures. Information can be devalued due to the values of team members, thus the mere existence of communication linkages may be insufficient for

superior product development capabilities. Thereby, Lenox and Ehrenfeld (1997) finds that environmental design capabilities are dependent on the existence of knowledge recourses, communication linkages and finally interpretive structures through which environmental information is understood and valued. Those firms with superior environmental design capability are expected to posse's information networks which link internal firm resources as well as external sources of information with the product development team. (Lenox & Ehrenfeld, 1997)

There has emerged an organizational form that drastically stimulates knowledge sharing, learning and change, by Wenger and Snyder (2000) called communities of practice. A community of practice is explained as a group of people that is connected through collective expertise and passion for a joint cause. In such a community people use an innovative way to share experiences and knowledge. Usually, it consists of a few core members that provide enthusiasm and leadership. These communities can exist within, or across, business units or between members from different companies. They are informal groups that organize themselves and lacks of certain given agendas that must be obtained. Communities of practice can help a company for example solve problems more quickly, transfer best practice, develop professional skills, and help recruit and train talent. (Wenger & Snyder, 2000)

Environmental professionals are, according to Jørgensen and Hagelskaer Lauridsen (2005), defined as a community of practitioners who span the traditional disciplinary fragmentation of science and established institutional arrangement. They address this community functioning as a series of trans-disciplinary networks where environmental issues are maintained and developed into operational knowledge and routines. Environmental professionals are described as coming from a trans-disciplinary practice without distinct restrictions to a science or formal educations; the general practice of environmental professional comes from a common engagement of working with environmental concern. Environmental issues are reframed through translation processes where different context receive new understandings. Jørgensen and Hagelskaer Lauridsen (2005) explain, by referring to Jørgensen (2003), how these transformation processes of constituting the environment as an object of action not is recognized because it takes place in networks that are hidden. It is stated, by Jørgensen and Hagelskaer Lauridsen (2005), that for success the interaction of environmental professionals crossing boundaries to other companies and stakeholders will be of importance. Thus, there is a need of innovators, corporate managers, and consumers and environmental professionals to communicate with each other.

Van Kleef and Roome (2007) describe how networks can be acting as platforms for exchanging information and ideas about sustainability. To have a heterogeneous network of actors with different perspectives instead of a homogenous network is seen as positive since it provides a better learning potential and provides for innovation (Van Kleef & Roome, 2007). Important skills to have as a manager working with sustainability issues is the ability to network, access to developed networks, the ability to make substantial changes at all company levels as well as good communication skills and to be able to address all organizational levels (Van Kleef & Roome, 2007, referring to Brown, 1997, and Clarke & Roome, 1999).

2.5 The Chain Perspective

The importance of having an environmental supply chain management (ESCM) approach in industry and to control and monitor all stages of the supply chain is pointed out by Welford (2003). For this to be possible all companies in the supply chain must cooperate and suppliers and distributors will need to have a functioning two-way communication. This will in turn often lead to closer relationships between the different companies. Attention is given to the need for education and training among the companies in the supply chain so that they can see and understand the important links that exist between the companies in the supply chain. It is also explained that best results is achieved through solid relationships between the actors instead of just exchanging goods or services at mutually agreed prices. This approach is new in the field of environmental management and since businesses drive globalization Welford (2003) expect business to lead the way to a sustainable development. It is also pointed out, by Jørgensen and Hagelskjaer Lauridsen (2005), that companies management systems require knowledge of the environmental impacts throughout the whole life-cycle of products. Mollenkopf et al. (2010) use the concept of green supply chain management (GSCM) instead of ESCM. They describe GSCM as a way to reduce negative impact on the natural environment from firms and their supply chains. Mollenkopf et al. (2010) refer to Corbett and Klassen (2006) and Mollenkopf (2006) who state that GSCM requires companies to work together with both suppliers and customers. One way to evaluate where the impacts are taking place a long a products life cycle is to use LCA which is a tool that makes companies address and evaluate activities outside of their control and their traditional responsibilities. Introducing LCA, and related concepts, in industry are combined with introducing a new way of thinking about environmental issues and will involve an understanding of life cycle principles. (Rex & Baumann, 2008)

Balkau and Sonnemann (2010) agree with Welford (2003) that partnerships are central to life cycle management (LCM) but states that it is difficult to identify partners in the product chain. Companies often fear having partnerships too far up or down in the chain, they believe there is a larger risk of losing control as the partnerships in the chain grow longer and that there will be too much administrative work connected with these partnerships. One of the major challenges according to Balkau and Sonnemann (2010) is to identify a meaningful length of chain partnerships. Due to the fact that companies believe it is difficult to influence suppliers of suppliers these chains often remain quite short and stakeholders, such as for example end-consumers, are also often left out of the chain partnerships. To strive for a sustainable development for the whole community, Balkau and Sonnemann (2010) believe that companies will have to learn to include multiple partners and have extended product chain.

Seuring and Müller (2008) refers to Handfield and Nichols (1999) and Schary and Skjøtt-Larsen (2001) and state that there are usually one company in the supply chain who can exercise more influence over the other companies in the supply chain than the other companies can – the focal company. It is described, by Seuring and Müller (2008), that companies and actors in the supply chain are connected through information, material and capital flows spread across the globe. The focal company is usually in direct contact with the customers and responsible for the production of the product or service and can therefore be held responsible for the results of its suppliers. This is something that Dyckhoff et al. (2004) and Reinhart (1999) also agrees with. Dyckhoff et al. (2004) state that it is the central company's responsibility to make sure the product and the suppliers follow stakeholder requirements. And Reinhart (1999) state that the leading company is expected to consider the environmental and social problems that occur throughout the product chain.

Bolwig et al. (2010) has another definition of the company with most influence in, in this case that value chain, and calls it the lead firm. A lead firm is a firm (or group of firms) in the value chain that can exercise external influence and control. Kolk (2000) chooses to call it the core firm and describes that it is the firm who controls (parts of) the product chain and therefore has a great impact on the other firms. One way to further understand a firm's strategy is according to Kolk (2000) to identify its position in the product chain, this shows the level of independence that the company is able to achieve. The core firm is the firm with the greatest level of independence and who exercise the most control, which in turn influence the environmental management in other companies in the supply chain. (Kolk, 2000)

Lately the concepts of one focal, central or leading company has been questioned and instead there has been an approach toward multiple companies in the supply chain has could influence environmental management. These companies are defined as actors in the public eye (APE). (Nilsson et al., 2010)

2.6 Reflection of the State of Knowledge

The literature in the state of knowledge is gathered from different disciplines which show that the environmental management field is fragmented and spread across many knowledge areas. To receive a structure, understand the diversity of the field and to recognize the different literature approaches we have divided the state of knowledge into five focus areas. We find one area that comprehends the big picture whilst another one focuses on the individual. The third one contains communication and language barriers. In contrast the forth area includes processes and networks. Additionally, we find one area that focus on the chain perspective. The five mentioned focus areas in the state of knowledge are illustrated and summarize in table 1.

Table 1 Summary of the state of knowledge

<h2>The Big Picture</h2>	<ul style="list-style-type: none"> • Environmental management is a diverse field • No specific educational background: Broad knowledge • Holistic approach: considers the entire lifecycle • Unclear work content • Requires other competences than educational
<h2>The Individual</h2>	<ul style="list-style-type: none"> • Different concepts of the environmental manager • The individual person: a way to handle environmental concerns • Committed to a vision and its implementation • Enthusiastic agent of change • Great communication and networking skills
<h2>Communication & Languages</h2>	<ul style="list-style-type: none"> • Concepts have different meaning for various practitioners • Different strategic languages • Challenging to translate environmental issues into other contexts • Communication over boundaries to gain access to information • Greening is a sense making process
<h2>Processes & Networks</h2>	<ul style="list-style-type: none"> • The challenge to address sustainability across the whole supply chain is not well understood • Environmental generalists demanded in a larger extent • Environmental design capabilities • Communities of practice • Networks can act as a platform for information exchange
<h2>The Chain Perspective</h2>	<ul style="list-style-type: none"> • Environmental supply chain management • Solid relationships throughout the whole life cycle • Functioning communication in the entire supply chain • Companies fear having extended partnerships • The focal company vs. APE companies

Each focus areas represent a direction we encountered within the literature. *The big picture* shows how the environmental field is broad and rather unclear. *The individual* focus on the environmental individual and managers as well as required skills. In *communication and language* it is described that there are different languages used, that concepts can have different meaning depending on who is using it, how communication can facilitate information sharing etcetera. *Processes and networks* focus among other things on information exchange and how to overcome process difficulties. Finally *the chain perspective* states the importance of extended relationships in the supply chain, supply chain management approaches and actors with greater influential possibilities.

We find in the literature the importance of having an environmental supply chain management approach. It is pointed out that companies often are frightened of partnerships with sub suppliers, arguing that there is a risk of losing control or that it could cause too much additional administrative work. We consider that it is more than lack of economical incentives that cause the environmental supply chains to be quite short. We conclude, since experienced from our identified APE-companies unwillingness to share information, that there most likely also exist competition and rivalry incentives for actors not wanting to engage in too long product chains and with many actors. In the product chain it is difficult to determine which actor that has the most responsibility for the life cycle coordination, but those with a larger possibility to influence can achieve a competitive position. Moreover, if actors in the product chain would state that they can influence all actors in the product chain they also would be obligated to take on this responsibility. These remarks effect how companies contribute in the life cycle coordination of product chains, as well as indicate a difference from internal environmental coordination. Internal environmental coordination is often built on a top management supported sustainability report with a clear environmental aim and including common encouragements and goals within a company. The environmental life cycle coordination in product chains often has vague common goals and thus the environmental coordination in product chains differ from the internal environmental coordination. We conclude that internal coordination is in contrary to the external coordination, managed with more explicit directions.

In the state of knowledge we see that there is a lot of focus on personal characteristics and individuals skills as well as entrepreneurs and agents of change regarding the coordination of environmental management. We also find a lot of literature focusing on the need for a chain perspective and to have information and knowledge of the entire supply chain. A language that connects different departments as well as networks is also considered important to achieve effective environmental management. The literature describe how there are environmental executives with diverse backgrounds spread across different industries and supply chains which is why we see an indication that effective environmental management in supply chains cannot be a result of one single hero or agent of change.

We conclude that it must rather be a consequence of solid work made by many involved life cycle coordinators within various companies. Though the literature on this subject is almost non-existing we find it likely since we saw the same pattern in our previous study. We found that there are multiple actors in a supply chain that has the ability to influence environmental

management in supply chains. These APE companies in the supply chain, as well as the fact that many life cycle coordinators work with these issues, indicate that there is not just one single actor but instead a web of life cycle coordinators in the product chain.

3. METHODOLOGY

Presented here is the study approach followed by the collection of raw data as well as the collection of secondary data.

3.1 Approach

Our master's thesis in environmental management is based on the bachelor's thesis in environmental management that we wrote in the autumn of 2009. The bachelor's thesis is a descriptive study of environmental supply chain management (ESCM) in a product chain, more specifically, of the fluff that is a component in children's diapers. Equally is the master thesis a descriptive study, but with an aim to focus on the persons working with life cycle coordination within the two actors that were identified as actors in the public eye (APE) in the bachelor's thesis. We found it interesting to do a follow-up study of these two APE actors and their life cycle coordinators since these actors considering themselves as having possibilities to impact the environmental management work in product chains.

First we contacted Svenska Cellulosa Aktiebolaget (SCA), the converter in our bachelor thesis, which after a presentation of the conclusions drawn in the bachelor thesis, were willing to participate in this follow-up study. Then we contacted Konsumentföreningen Väst, who wanted to contribute and also recommended us to contact Coop. Further on we got hold on Willys that moreover directed us for contact with Axfood. The collected material can be somewhat overlapping since we have interviewed two distributors, but we found it interesting since they have different kinds of ownership along with different modes of operating. The two distributors have paid attention to the coordination of environmental management for varied times periods, one has done it for a long time and the other is in the beginning of this work. We considered that gaining information from both distributors gave a deeper understanding of factors that determines the life cycle coordinators success in the coordination of environmental management.

In the empirical findings we have added quotations from the interviewed respondents that we believe help to highlight certain statements and descriptions. These quotations are cited both in Swedish and then in English because we did not want to lose important information in the translation process. The Swedish quotations are the exact words spoken by the interviewees whereas the English translations are made by us as authors. The four figures in the study are made in cooperation with Jakob Pontén.

The collected data from the interviewed respondents (empirical findings) and in the state of knowledge has subsequently been analyzed to lead us to our conclusions. We sorted the state of knowledge under five areas to acquire the whole picture, and we also added a sixth area with our conclusions and reflections regarding the five first ones. The empirical findings were divided in two themes to receive an overview. First theme focus on them as individuals for example background, drives and characteristics, and the second theme focus on how they view themselves in the organization and their role in a larger perspective. During our processing of the material in the analysis we further revised it in two main themes and six sub-themes: first the individual perspective including; background, view of themselves and their role and drives versus struggle, and secondly the organizational perspective which include; critical factors for coordination of environmental management, the chain perspective as well as networks and communication. Since the empirical findings are mostly built on respondents perceptions, these can sometimes belong to more than one of the analysis themes which therefore occasionally overlap.

We have found that there is no collective received title for those working with coordination of environmental management. Instead there are several different titles such as environmental manager, environmental coordinator, environmental senior scientist, sustainability developer and so on. This shows how fragmented the discipline is. Since all of the interviewed respondents to some extent are working with the coordination of environmental management we have in this study chosen to refer to them as life cycle coordinators.

3.2 Collection of Raw Data

Raw data has been collected by conducting in depth interviews with persons working with the coordination of environmental management within one converter and two distributors.



Figure 4. Illustration of the APE companies position in the fluff product chain

The converter is represented by SCA where we have interviewed the environmental manager, Susan Iliefski, and the senior scientist for environmental and product safety issues, Ellen Riise. The distributor is represented by two different companies. At Willys we have interviewed the environmental coordinator, Janne Krantz, and we have also interviewed the

environmental manager at Axfood (which owns Willys), Åsa Domeij. At Coop we have interviewed the environmental manager, Mikael Robertsson, as well as the environmental specialist, Catrin Björkman, at Konsumentföreningen Väst, a consumer association that represents the owners of Coop in the western parts of Sweden.

To obtain a great overview of how the life cycle coordinators are prevailing and if there are factors determining success in environmental management we made an interview guide (Appendix A) focusing on them as individuals but also in a wider perspective. We thus tried to map if they had certain characteristics asking them about their background and education but also how they viewed themselves. To understand their involvement in the chain perspective we also asked how they communicate and cooperate, and what they recognize as critical factors for coordination of environmental management. Both authors have participated in all of the interviews to ease the information sharing and to facilitate for us when analyzing the material afterwards.

The interviewed has been confronted with equivalent questions that mostly been open, thus the raw data is built on qualitative interviews. A structure we used to reach comparable data, but most of all because we did not want to miss or disregard important new aspects which can take place if interviewed respondents are guided. (Krag Jacobsen, 1993)

3.2.1 Conducted interviews

Björkman Catrin, from Konsumentföreningen Väst. Interview conducted 2010-05-03.

Domeij Åsa, from Axfood. Interview conducted 2010-06-04.

Iliefski Susan, from SCA. Interview conducted 2010-06-08.

Krantz Janne, from Willys. Interview conducted 2010-05-03.

Riise Ellen, from SCA. Interview conducted 2010-05-28.

Robertsson Mikael, from Coop. Interview conducted 2010-06-04.

3.3 Collection of Secondary Data

We did a broad literature study to obtain an overview of the existing knowledge about the conditions for working with the coordination of environmental management, and particularly about coordination work in product chains. Simultaneously, we obtained an analytical framework for our empirical material. The literature that we have gathered has been of varying relevance to our study. Some of it was useful for the analysis, whilst other literature

helped us to see the big picture. We are surprised that we have not been able to find more relevant literature or studies of our area of research. We wished to find literature on the coordination of environmental management in a lifecycle perspective and how this should be, or is, handled over the traditional business boundaries.

When gathering literature and articles we have done so by searching databases for articles via using the three areas of focus in figure 1 (p. 2); the environment, the ability to coordinate, as well as information about the product chain. The databases that we have used have been typical business administration engines e.g. Business Source Premier and we have also been searching via typical social science databases e.g. Academic Search Elite but also through Google Scholar. We did a quite extensive search since we found the discipline fragmented and that it spans over several knowledge areas. Then, we encountered a massive amount of data from which we had to carefully screen out the non-relevant literature. Further, we have used literature given to us from our supervisor. From the literature we have retrieved references and been able to search additional literature via databases and library searches. Also, we have taken a short search lesson at the economic library at the University of Gothenburg, which helped us find more search alternatives and additional literature. The collection of secondary data has not been a straightforward process.

To handle the complex data we did a classic mind map and a power point presentation for our supervisor and one more person studying the field. We also had a brain-storming session. This resulted in that we could sort the state of knowledge into five focus areas. Because the theoretical material may have characteristics of more than one area the division of the data into focus areas might be somewhat overlapping. The structures of the state of knowledge helped us to emphasize our analysis and support our conclusions.

4. EVALUATION OF THE STUDY

Below follow a review of methodology problems and criticisms of the used sources followed by the sections regarding reliability and validity.

4.1 Methodology Problems

Our study is proceeding from the coordination of environmental management in one product chain, and therefore we do not have a wide general understanding about the complexity of working with many different product chains. The study is based on one converter and two distributors. If we would have been able to study many various, both actors and also product chains, we would been able to consider different organizational contexts. But by choosing one chain and one converter and two distributors we achieved a focus and a greater observation in how people work with coordination of environmental management in product chains at companies identified as actors in the public eye (APE). We hold that this was the best way to reach our purpose. Our study is undertaking a disregarded area of knowledge, which needs to be further investigated. Our study contributes with knowledge and insights to offset future research.

Initially we set out to do an observation of the two actors that we identified as APE in our bachelor's thesis. We intended to do a short internship of a week with each of the two actors' environmental departments to be able to experience their workplace and observe how the different life cycle coordinators interact within the company and between the actors in the product chain. We wanted an opportunity to observe the (possible) communication and information exchange that takes place between staff and departments. Additionally, we wanted to interview various staff with different functions within the company, such as environmental, purchasing, marketing et cetera to be able to examine how persons are working with environmental issues in the two APE actors to enhance environmental performance in the product chain as well as how they coordinate this work. Since none of the companies could offer us an internship, we instead decided to perform a number of interviews with a converter and two distributors. Thus we received adequate information through interviews with those working at these identified actors with coordination of environmental management in product chains. The studied focus area is fragmented and the research question is broad, therefore interviews were a better research method than surveys. A survey can contribute with transferable information but in this case it was better to conduct qualitative interviews where new information could be obtained, information that could have been missed out in a survey.

4.2 Criticisms of the Sources

Towards our sources we have tried to hold a critical approach to achieve a reliable knowledge base. We are well aware that no source is completely impartial, to enclose sources with a high degree of verity have we as long as feasible used primary sources, but we have found in some cases that secondary sources had sufficient reliability to be adequate.

Our empirical findings are based on the respondents answer, and not as we would have preferred on observations. Observations would imply a deeper understanding and a possibility to deeper study the interviewed respondents' correspondence and relationships with others as well as given us a greater understanding for their motivation factors. This and the fact that we just interviewed the persons working with the environmental management coordination, and only six persons, also cause that the interviewed can have distorted parts of the information we had access to. To cope with this we have, during both the interviews and when conducting the analysis of the data, tried to clarify their motives to increase the study's credibility. We find that interviewing six persons, from one product chain, has been meeting our needs to investigate if there are combination of factors that determines the success of an environmental manager. We have used a qualitative content analysis (Lundahl & Skärvad, 1999) while sorting the secondary data in the state of knowledge under five themes to generate a larger understanding of the authors' approaches towards the problem, which increase the reliability of the study.

4.3 Reliability

To make the respondents feel comfortable and reduce their distortion of information, we have explained to them, before the interviews that our intention has been to describe and identify their working position, and therefore that there are no right or wrong answers. We have not used concepts from the state of knowledge instead a moderately simple language to reduce misunderstandings. The studies reliability has increased given that the material been comparable since we used an interview guide in which all respondents are faced with the same topics. The reliability of a study is shown by its absence of random error, if the research of the study is not affected by the approach, situations when implemented or by who performed the measurement it has a good reliability (Lundahl & Skärvad, 1999).

4.4. Validity

Our investigation and measurement has presented a good benchmark based on our purpose. The study is qualitative and it is descriptive, we are trying to describe if there are factors that provide life cycle coordinators with success in their work. Our purpose is thus not to gain

results that have high transferability to other contexts, but we do consider that our study has possibilities to be transferable since the respondents are working with the coordination of environmental management in a general product chain. The validity of a study is indicating if it is measuring what was meant to measure, if the instruments used receive relevant information and therefore validity is based on reliability (Lundahl & Skärvad, 1999).

5. EMPIRICAL FINDINGS

The empirical findings are divided into two themes; one that focus on background and individual characteristics and one that focus on the life cycle coordinators role in a larger perspective. To locate their background, how they view themselves and their role, what drives and struggle they perceive, what they consider as critical factors for coordination of environmental management, how they practice communication and participate in networks as well as in the chain perspective, we have regarded what each actor announced.

5.1 Background & Individual Characteristics

5.1.1 Iliefski, SCA

Since year 2006 Susan Iliefski has the position as environmental manager at SCA and is responsible for environmental and product safety for hygiene products globally. Iliefski describes that she previously worked at a chemical company and at a hydraulics company and that she started working at SCA in 1992 because she thought it was a good company that provides products that people are in need of. She has worked at different departments within the company for example with development projects, research, environmental aspects et cetera. Originally Iliefski is an engineer from Chalmers and graduated in 1988. There were not so many environmental courses then, but something that she has used from Chalmers is her knowledge of energy, management and product development. Iliefski believe that a lot of things could be learned gradually like she has done with production and product development which are areas that she consider could not be learned in school. One important thing to learn from education is a basic methodology to solve problems and to recognize possibilities according to Iliefski, who points out: *“Att du har grundläggande metodik för att lösa problem eller för att se möjligheter, liksom tänka, aha okej hur gör vi här nu?”* (To have a basic methodology to solve problems or to see possibilities, like thinking, oh okay how are we doing here now?) She would consider it a disadvantage not to have learned the technical parts in school. She has no trouble discussing processes with suppliers since she has worked a lot with it herself. But on the other hand Iliefski also state that knowledge always can be learned, but that the technical parts are more difficult to learn retrospectively. Additional education would not have given her more influence in her daily work instead she believes that it depends more on personality says Iliefski.

Most of Iliefskis colleagues are engineers and economists but they usually have different backgrounds compared to her. This is something that Iliefski appreciate and think is fun since she learns a lot all the time from other people. Sometimes she does not agree, but is finding that from this there is a chance to learn new things. To learn is fun and there are always new

things to learn according to Iliefski who likes to read books and learn more about the environment and related issues. Further, Iliefski finds the environmental area itself to be interesting and important. Also, arguing that the fact that even a small enhancement in a product could make a difference in the world is motivating. She also considers it very fun and varying to work together with so many different departments. She also feels quite pleased with the attention she has gotten and thinks that the last years have been positive. Iliefski thinks that she has been able to focus on the issues that she has wanted and are satisfied with the department having 16 employees.

The work at SCA is permeated with lifecycle thinking and this is also a great part of their external communication according to Iliefski. Their work at the environmental department consists of considering how SCA purchase products and what alternative products there are, material innovation and product development, production of products at the factories, energy consumption, effective resource use, waste disposal, sustainable solutions et cetera. Sustainable solutions are a way of looking at the context, for example how to produce a product without any spill to enhance environmental performance and reduce economic losses or to make sure that customers buy the right combination of products that they need.

5.1.2 Riise, SCA

Ellen Riise has an employment as senior scientist at SCA, which implies being a specialist in an area that is of strategic importance for the company. Riise is working at the environment and product safety department, and are specialized in environmental assessments of products and mostly use life cycle analysis as her tool. To have product safety and environment integrated is according to Riise a good organization since the areas are close to each other. When starting at SCA, Riise begun as a trainee at the computer department, she were studying to become a software engineer and codifier, as well as business administration, after having problem finding a job as a biologist. After that, Riise worked close to the economy function and subsequently they asked her to work for them as a controller. During the two years as a controller she was trying to get contact with the environmental department. The combination of computer science, business administration and calculations is close to lifecycle analyses and is pursuant with the interests of Riise, thus it was her interests that directed her to the position she has today.

According to Riise, everything is enjoyable with her job and most of all she points out that it is very stimulating to work transversally, across different areas of expertise. Further, she

explains the importance of having an environmental competence but also a general knowledge, since it is of major importance to hold a broad know-how, and the fact that they also are cooperating with their competitors makes the job interesting and motivating. A lot of environmental questions are on an international level, as for example international policies, and then Riise is working together with competitors or companies in general that come across similar problems to find solutions. Additionally Riise state that there are always areas that are difficult and where it is not done enough, and she points out questions that always could be asked like, should we be on our guard, could we be calculating in a another way and so on. Riise consider herself as a person who is tough and tends not to think of things as difficult or impossible to solve. But there are those who might consider working with these issues hard and sometimes rough.

With her broad background Riise does not consider that she needs to complement her education, or is missing out on knowledge, to be able to perform her job. The only thing she would like more of is time to read more environmental literature, but she considers this a luxury problem. At the environmental and product safety department the employees has mostly a similar educational background, a majority have an engineering graduation and some of them are biologists. It would not been smart to have an environmental department with seven biologists, instead should it be a good combination of both people and competences to receive a superior implementation and endurance. Riise says: *“Det är nog viktigare att vi är olika som individer än vad vi har för utbildning.”* (It's probably more important that we are different as individuals than what education we have.) Most of all working with these questions, says Riise, require a basic scientific knowledge to possess an understanding. But also is it good if there are several ways to see the problems and a diversified group with different ways of expressing themselves. Different ways of thinking is important, but Riise make clear that this is not special for an environmental department, instead something for organizations in general.

5.1.3 Domeij, Axfood

Environmental management is a very broad subject, which includes both environmental and social responsibility, according to Domeij. It could be everything detailed issues such as mercury concentrations in the air to energy saving lamps in China, or major global strategies for example very wide issues like new sustainability programs that she has been working with now. Domeij points out that often quality issues are connected with the environmental

department but she state that for her this is not the case, she is responsible for environmental and social responsibilities.

Two years ago Domeij started at Axfood, because she thought that the combination of food and environmental issues were interesting. From the beginning Domeij is an agronomist and has been working a lot with primary production in the past. Domeij explain: *“Och sedan har jag på väldigt olika sätt nästan alltid jobbat med miljöfrågor, men på väldigt blandade sätt.”* (And then I have in very different ways almost always worked with environmental issues, but in a very mixed way.) After university Domeij has been working as an agronomist in Northern Norway and outside of Haparanda, after that she was in the parliament for three years at the Environmental and Agriculture Committee, then she worked with satellite imagery in the marketing area in Kiruna that included a lot of travelling and projects to South America. Then she started as a government consultant in environmental engineering at SLU with research information, continued as a commissioner of the opposition in Uppsala for a couple of years which followed by a period in the parliament, and she was the vice chairman of the Environmental and Agriculture Committee. At that time Domeij also were in the budget negotiations so she worked much with economic policy and environmental policy, doing these kinds of negotiations for every weekday during a four year period which meant she was in a culture of negotiation. She has been working in both the private and the public sector and also had other assignments for example investigative missions and been a member of different boards. Domeij holds the period in the parliament as the most important experience for the function she has today at Axfood.

Domeij consider that she has a good foundation of experience for her job, since she has a very large width. First she has a five-year agricultural sciences education, with internship experience in agriculture which was a broad education including; economics, chemistry, physics, biology, plant knowledge and technology. She complemented her education by reading one year of environmental law and some languages. For example she had advantage of her Spanish when controlling the banana plantations in Costa Rica. She consider that it is great to have an academic education as a foundation but that the real basis of knowledge is most important and having a width for this type of job rather than be narrowed and specialized. Which facilitates communication according to Domeij, since it is much easier for example to communicate with economists if you know what an investment budget is or with lawyers if you know a little law or to have some chemistry knowledge when talking to chemists what may exists in a product. It is good to understand different concepts of values

and be familiar with various concepts in such broad job to be able to discuss with different departments and people says Domeij.

Today at Axfood Domeij consider herself as a catalyst of the environmental work, but can see that initiatives are coming more and more from different directions. Domeij describes: *“För mig är det viktigast att vara just den här katalysatorn, att entusiasmera och se till att processer rullar på och inte stannar upp och så där.”* (For me it is important to be on this particular catalyst, to inspire and ensure that processes are rolling on and not stop to things like that.) This is great fun according to Domeij because it is what she want to achieve, eventually she also want to include the store levels to be environmental forces in order to make their own local programs and activities. Right now they are working with a web-based training and education for the employees, since one of the major problem according to Domeij is that the company is large, with many thousands of employees that need to be reached on more than 20 working places which are dispersed geographically. Further, Domeij explains that the web program needs to be adapted for people without a lot of background knowledge, given that the average level of education in the stores is low. It must be very basic environmental education that can help them to work with issues in their daily lives.

The educational background is diverse between Domeijs colleagues, and there is also a challenge to understand the skill levels of different types of people since the entire industry is non-academic and there are many who have learned the grocery stores from the ground up, as might have started working in the shop when they were 15 to 16 years of age, was ahead and passed internal training and advanced, and which today is at a high management level, but without much formal education. They have not received much training from other sources, and they have very good knowledge about grocery stores but can be incredibly foreign to other things as for example environmental issues. And then it is important to be able to provide data that suit people with different skill levels. At the same time it is strength that people have their experience from very different directions, and it can be exploiter when turned into questions that can help people to learn something according to Domeij. Domeij describes this by saying: *“Har jag vetat att en person arbetat länge praktiskt i en butik eller i olika typer av butiker då vet jag att den har en viss typ av kunskap där.”* (Have I known that a person has worked a long time in practice in a store or in different stores then I know that they have a certain kind of knowledge there) At the same time that one can complement each other very well but they could also talk past each other if they do not speak the same language.

The way they work at Axfood is fairly new since Domeij only have worked at the company for two years. First the CEOs were deciding the coordinators and anchored it firmly, and then it took about nine months to get the coordinators on spot. Domeij states the importance that it was the CEOs that appointed the coordinators and the foundation for the environmental management work. When the coordinators are meeting they have some education, in the beginning it first started with basic environmental science and environmental management. For these educations Axfood also has been taking in external persons. Domeij points out that it is really important with CEO support. Domeij feel much support by Antonia Axelsson Johnsson. Domeij got “*a huge signal*” of this support a while ago when they had an environmental coordinator meeting. Domeij asked Axelsson Johnsson to come and talk a bit about the owner's vision and thoughts, the signal came by Antonia’s appearance and that she stayed the whole day. For environmental coordinators it is significant that the owner thinks that what they are doing is important work by meeting and discuss with them.

5.1.4 Krantz, Willys

Krantz is one of four environmental coordinator at Willys and explains that he has an environmental responsibility within the company but that his main responsibility is to work with campaigns and marketing, TV advertising, commodity pricing et cetera. Krantz has worked in the business since he finished school and says that it is a business where things move fast and that he likes to work in that kind of environment. The position as environmental coordinator was something he happened to get and Krantz explain that these questions might not be so coveted to work with for many persons. It facilitates to have an interest in environmental issues while having this position according Krantz who believes it could be difficult to engage if not believing in the concept. In this perspective Krantz experience something of a dilemma since his main task is marketing and campaigns which, compared to environmental issues, is a rather small and unimportant concern. The role he has as environmental coordinator is experienced as a rather difficult one with a lot of headwind and a need to fight for the cause. At the same time this does not bother Krantz so much, instead he rather think it is quite fun. He explains that ecological products always have to be argued for since they never have a high sales statistics compared to conventional products. Then other colleges do not find it as motivating to add an ecological product compared to a conventional one, a discussion that occurs quite often according to Krantz. Krantz own motivation is something he receives from his children, their future and the simple but clever insights that they provide.

The environmental coordinators within Axfood all have different backgrounds, for example the environmental coordinator within Hemköp is an information manager and is used to external communication. At Dagab the environmental coordinators have long experience working within the company and know who to talk to, and which strings to pull to make things happen. Krantz sees no disadvantage in not having colleagues with the same background. Instead he believes that he could learn from his colleagues since they have other competences et cetera. But if he would have had a colleague with a similar background then he believes that he could have used this to juggle issues. He also thinks that it is important that the main responsibility for environmental issues lies within sales and marketing since otherwise it would become difficult to act because then other departments would have to effect the sales and marketing department first. This problem is already solved according to Krantz since he already works with these issues.

Krantz believes that they have the resources they need centrally within the company but that they with more resources could be able to talk to all store employees and get them passionate about the issue which in extension provides communication with the customers. Regarding his own education Krantz think he could learn a lot more since he sees himself as a ordinary, but maybe a more enlightened, customer. But mostly he is interested in knowing more about different contexts and which product choices that leads to better environmental outcomes. Also, the social issues are of interest to Krantz since these issues are also integrated in the environmental work of Willys.

5.1.5 Robertsson, Coop

Robertsson is the environmental manager at Coop Sweden, which consists of the four food chains; Coop Nära, Konsum, Forum and Extra. Robertsson has been with the company for 21 years and started his career working as a store employee and then advanced to having stores of his own and have had virtually every possible position within the company except CEO and security chief. Among other things he has been responsible for the product development of the Änglamark products. According to Robertsson it is an advantage to know the company as he does when about to develop environmental and sustainability issues in retailing and he feels he has the ability to raise questions that top management respond to.

Before Robertsson got the position as environmental manager he was responsible for a food program within Coop, which involved making organic food available to consumers. This was initiated by members' propositions from the consumer cooperatives and therefore from the

grass roots of the organization, not a clever advertising agency on upper Östermalm which Robertsson thinks is important to convey. When getting the assignment of being responsible for the alternative food program Robertsson did not think anything in particular about it. It was seen by him as an assignment as any other, except for the fact that he considered himself as a city kid, originally from Södermalm, and now he was suppose to meet farmers and talk to farmers in their language which was a challenge in the beginning. But Robertsson also think that this was an advantage for the framers who got to know a person who knew the retaining business since that is where most of their products end up.

According to Robertsson the environmental movement within Coop started with the food when people did not want to eat food that had been treated with chemical pesticides or buy meat from animals that had not had a life of dignity, and then out of that the environmental movement was sprung. It was after this that the CEO asked if he wanted to become environmental manager. Robertsson explains that he is not an educated technocratic from the University instead he is self-taught and consider that the hard way many times is the better way of learning since then you get to learn the real lift rather than calculating and doing algebra. Though there are some things that Robertsson would be interested in learning more about, such as connections between food and agriculture and environmental consequences. Even though he feels he knows enough to handle both professors and others because he knows the retailing business. Compared to his colleges Robertsson considers himself quite unique since he believes that no other person in Sweden has started their career working as a store employee, instead most people are academics. Robertsson does not consider it a problem other than that they need to learn the retailing business and that he knows the retailing business and might need to be a little more of a academic. Communication between different departments is not considered a problem since Robertsson say he uses a non complicated and simple language when communicating to others. Regarding communication with for example NGOs et cetera Robertsson prefer direct contact between them and these groups, though he does not feel the need to have the same opinion but thinks that it is better to talk to each other instead of communicating through media because at the end of the day they have the same goal – a sustainable globe – it is just that Coop is driven by sales and NGOs by ideology.

Robertsson points out that it is important to have a working structure and that it is important to make sure that all levels within the company continue to work with the sustainability issues. He would like to use less of his time to make sure that other people do their job, it is important that everyone takes these issues seriously and that there is a good feedback to top

management. Personally Robertsson thinks it is motivating when the environmental issues are progressing and says that: *"Det är väl de här kickarna ibland att miljöfrågorna går framåt och man är ju lite ego också sådär att det är alltid kul om man blir uppmärksammad ibland också, både internt och externt."* (Well it is these kicks at times that environmental issues are moving forward and to be a little egocentric, like it is always fun if you get noticed sometimes, both internally and externally.) Attention often leads to awareness from top management which is considered to be a positive experience. Robertsson does not think of himself as the person who motivates people around him, of course it happens from time to time, but he explains that he is well known within the company and does not have to be that person. Robertsson considers himself to be a source of knowledge and corrector since many colleagues ask for his opinion in matters of what is right or wrong. Sometimes he knows the answer and gives it right away, other times he considers it as an education for the person who asks and instead tries to help that person find the answer by themselves.

5.1.6 Björkman, KF

Björkman is working at Konsumentföreningen Väst, one of five consumer associations that Kooperativa Förbundet (KF) consists of. Kooperativa Förbundet is the owner of Coop. Mostly Björkman is participating in the sustainability development and how the stores communicate and show this work externally. The Coop-corporation has eco-ambassadors that are specially engaged in these issues and KF educates them about why products should be selected. These eco-ambassadors work in the stores to inform customers about their choice of products. Customers can by buying goods and by selecting products show what should be in the assortment of the Coop stores. By information, Coop can influence customers, which in return can influence the purchasers in the stores, and then affect the store managers. Björkman is working a lot with the store managers to inform them about different campaigns and different assortments that exist. Besides that Björkman is involved with specific issues such as increasing the ecological products sales by ensuring that a certain assortment is available in stores. She is working a lot with other specialists who focusing on fair trade and ecological products. The term of her position is business developer, where she is specialized in environmental issues. It is her interests that led her in to the work position at the consumer association, she saw an ad and liked the combination of customer service and environmental issues. Before this position she was working as an informer for Renova, and in addition studied to public information officer, human ecology and environmental science. Economic and environmental science is an important combination of subjects to have knowledge of.

Björkman describes that there has to be a long-term thinking and an understanding that the mixture of economics and the environment is incredibly important.

Björkman would have wanted to learn more about chemicals, to have more knowledge about their impact, which ones that are dangerous and how they work together. Educationally she felt when she took the employment that she lacked knowledge about how farmers actually work. Last year she therefore took a distance course together with farmers from Dingle, which gave her an understanding of how they are working. She learned for example that the issue of pesticides cannot be seen in black or white.

Through the range of products Björkman finds that she has an opportunity to influence the environmental work. She is working hard to ensure that there is organic and fair trade assortment available in the stores. In the same time as she is working against competitors investigating what they have to offer and if finding something missing in the assortment of Coop look into how they can obtain the product. As most important for the environmental management coordination, Björkman argue is understanding and obtaining knowledge, but also a willingness to work with these issues. The way Björkman is influencing is mainly through sending in her opinions to their board meetings with all the members, by calling to different departments and by sending emails.

Björkman explain that she has to be positive and cannot be turned down because there is so much that can be done. Explaining that a positive approach need to be taken even when faced negative by those that do not believe in it and who say it is just marketing or think it is too expensive. She argues that what we do is of importance by saying: "*Vi måste ha ett tänk och en inställning att det vi gör är av betydelse.*" (We must have a mindset and attitude that what we do is important.) Further she explains how it is incredibly important what one person does, since this does spread to ten people around that person, which then affects ten people around that person and acts like ripples on the water. But she is pinpointing that one should not be fanatical and avoid suppressing people. Instead give an explanation of what a relief it is for those who do not have to work on the plantation with toxins etcetera. Björkman states that she can sow a seed and next time maybe those people can think one step longer themselves. Anyone can contribute and sometimes just asking for a better environmental choice can make a difference. Björkman emphasis that it is important to never give up.

5.2 The Life Cycle Coordinators Role in a Larger Perspective

5.2.1 *Iliefski, SCA*

The environmental department is well known within the company and when it comes to environmental issues this department acts as a hub for the other departments. They have the ability to transfer information between departments and perform lifecycle analysis's and product safety assessments that other departments has requested explains Iliefski. She also works together with other persons in cross-functional teams where they for example produce environmental strategies. These teams include persons from different department which is positive, according to Iliefski, since this provides the teams with a rather high decision level and if there is something that they cannot solve they can talk to the different top management groups depending on the which question to discuss. She experiences a great possibility to influence environmental management in product chains both through her position as environmental manager, her department and through the different cross-functional teams. The members of these teams also act as ambassadors so that Iliefski and her department can keep track of what happens in the organization. To Iliefskis help they also have coordinators at the factories working with quality, risk, health and environmental concerns. It is impossible to have a constant way of working since there are so many different environmental issues that address different department and this means to have contact with a lot of different people at different positions which is why Iliefski consider her job as fun.

The environmental department works a lot together with the purchasing department says Iliefski who describe that there are many different persons and departments that can influence the coordination of product chains but that the purchasing department has great significance since they strive to have a sustainable way of working with their suppliers. Iliefski believe that the environmental department should not do all the work but instead they have succeeded when for example the purchasing department talks about environmental issues without their involvement.

When coordinating environmental management there are a lot of aspects to consider says Iliefski; raw material, brand responsibility, product development, how to assemble the product in the optimal way, and that is why many departments are involved; environmental management, the purchasing department, the product development department et cetera. Iliefski believes is important when coordinating environmental management in product chains to have a good understanding of the business and not just the own area of expertise and to know the different parts of the value chain. She points out that it is essential to be able to

explain environmental issues in a way that make people understand how environmental concern are related to their area of expertise. She also wants to bury the myth that environmental issues are more complex than other areas because all areas are complex in their own way. Iliefski says that: *"Det är så, vilka områden du än jobbar med så är ju folk, folk kan ju sitt eget område bäst, det är inte unikt för miljö."* (It is like, whatever areas you are working with then people, people of course know their own area best, it is not unique for the environmental department.) Iliefski explain that in a big company people cannot be experts at everything and some people focus on the environmental part whilst others focus on their parts which is why communication is so important. Communication needs to be adapted to the recipient so that the information given is relevant to the recipient, otherwise they will not listen explains Iliefski.

In the coordination of environmental management Iliefski does not think there are many problems or difficulties. She considers communication to be a condition to manage coordination and that it is of significance to be able to communicate around every area of expertise. Iliefski enjoys the communication part and states that they have managed to do that quite well. Even though Iliefski does not see any problems in her working environment she does consider it a challenge that SCA expand which means that there are a lot of persons to talk to and reach. How to communicate with people at an appropriate level is also a challenge according to Iliefski, something she believe all big companies struggle with. However, working with environmental management is considered a rather grateful job since it is possible to communicate it in an interesting way. There is no problem according to Iliefski to get people interested and engaged, the problem is rather that they get too engaged. Iliefski consider that the environmental department has a role to inspire others to take action and contact suppliers et cetera. This because others might lack knowledge of how to do it and need inspiration, but she does not think that they need to motivate others. Iliefski hopes to inspire her employees and to make them see possibilities, to take initiatives and to grow personally. Also that the department considers their own communication and makes sure that the communication and information they deliver is understood and made use of. She explains that: *"Jag tror misstaget man gör många gånger det är att man tror att man kan ha samma kommunikation för alla."* (I think the mistake made many times it is that we think we may have the same communication for everyone.)

The last few years there has been a lot of environmental education at SCA. At these occasions the difference in educational background has opened up for additional perspectives. Often

participants engage and send e-mails after the trainings days are over. Further, Iliefski explains that the environmental educations that they provide must be applied to different groups which is why they customize certain courses for example to the purchasing department when they are about to do audits.

A large network is important to have according to Iliefski since otherwise they would have trouble reaching out to people. Some argue that the environmental manager should be a part of top management but Iliefski does not agree with that. According to Iliefski it is more important that she as environmental manager has access to different management groups and get continuity and get in contact with the people and colleagues that she need to be able to do her job in the best of ways. Iliefski explain that it is important to understand that environmental concerns are spread across many different disciplines and that the environmental department role is much like a coordinator. Even so, Iliefski argue that not everyone needs to work with everything and that if different areas are defined then it is not complex after all.

5.2.2 Riise, SCA

With information about the product chain and through contact with both suppliers and product developer Riise is providing necessary data for the environmental management. Thus, through the ability to come up with information needed in the product chain she is influencing the environmental management. Important for achieving a coordinated and effective environmental work in a product chain is according to Riise to have structured environmental management and knowledge of the entire product chain in order to identify where work needs to be done. Working in a structured way generates a chance to affect the product whole chain. For SCA it has been the lifecycle analyses that led to their work with every step in the product chain. To achieve a structured environmental work SCA is working with different points at each actor and the things they need to meet or implement, for example environmental strategies and what should be included in them. By her specialist knowledge in lifecycle analyses Riise says that she is one of the driving forces in this work. She claims the importance of working in the same direction and to ensure a system around these points.

Which unit the environmental and safety department are working closest to depends on where or what environmental work that needs to be carried out. A large company will not be able to have an environmental management coordination done by one person says Riise. Instead there are several functions, projects and groups that are part of this work which are driven by the

environmental strategy. Thus, Riise explains that no unit at the company is more important than another; instead it depends on what has to be solved. She also declares the importance of an environmental strategy which shows what needs to be done and gives the different departments directions. Riise explains that the environmental and safety department provide the various units with advice, guidance, guidelines, education and information and then the units use this and do what they do best. To coordinate environmental management all units need to participate, the environmental department will not solve the environmental issues on their own, but they can see what needs to be done. Riise says: *“Det går inte att driva ett sådant här stort miljöarbete om inte andra jobbar, det är inte miljöavdelningen som ska lösa miljöarbetena utan vi ser ju vad som behöver göras och sedan måste det starta runt om för detta.”* (It is not possible to enforce this kind of great environmental work, if others are not working, it is not the environmental department that will solve the environmental work, we look what have to be done but it has to be started from there.) To handle this all units have a position or a person that has contact with the environmental and safety department.

The most important thing to achieve success in coordination of environmental management, and especially in such large company, is that top management says that it is a priority according to Riise. She says that: *”För att om inte ledningen har sagt att man ska jobba med en sak, det vill säga antagit en miljöstrategi så har du ingen chans att få de resurser som behövs.”* (Because unless management has said it will work with one thing, i.e. adopted an environmental strategy, you have no chance of getting the necessary resources.) There must be a clear message from top management that all units should work with the environmental strategy and she state that it is only top-down management that will be successful, nothing else. But, she admits that the environmental and safety department can influence top management through knowledge. Riise consider the environmental work to be very interesting and stimulating, at the moment especially the questions regarding environmental communication. Since they are not used to it, it makes it difficult in the same time as it is essential to get it right. She also explains that when communicating environmental concerns it is incredibly important to be able to verify those claims that are behind the communication.

When it comes to the internal communication Riise recognize that there are different ways of expressing themselves in various departments. When communicating with departments that are not that use to environmental questions both parts has to adjust their communication and talk as clear as possible. First, she claimed that it has nothing particular to do with communication of environmental issues and that it is not more difficult to communicate

environment than any other issue. But later, when it comes to daily bases Riise declare that the environmental and safety department, when transferring an environmental message, have to adapt the message to the recipient. It is considered a challenge in how to communicate properly. Further, Riise argues that it is good to have a broad educational background to understand different way of communicating and easier can find solutions there are communicational differences between people.

5.2.3 Domeij, Axfood

At Axfood, Domeij describes, they have structured the organization with about ten environmental coordinators which are all located at different companies within the Axfood Group. Also the assortment and purchasing department has an environmental coordinator and with them Domeij discuss e.g. environmental purchasing guidelines, products and packaging. She explains how they have the most possibility to influence environmental management when it comes to their own brands both concerning contents and packaging. She says that: *“Så att för mig är det mycket lättare att påverka de varumärken som Axfood har, mycket lättare än att påverka märkesleverantörerna.”* (So for me it is much easier to influence the brands that Axfood owns, much easier than to influence external brand suppliers.) They have developed a sustainability program which they are working with concerning products, transportation, energy, local usage, refrigerants, welfare, social affairs, education, waste and recycling et cetera. And it is also quite common for suppliers to respond to Domeij, because they want to discuss with her instead of the purchasing department. This is according to Domeij because they want to know how she feels about the way they are working.

The communication manager is Domeijs executive, but in practice she is working very independent, since they do not have a central environmental department. Domeij describes that she is communicating with various persons in the corporate group; directly with the CEO, the executives of the companies or with the environmental coordinators. To manage a functioning coordination of the environmental work and the coordinators Domeij conclude that it first of all need to be right persons that work with these issues, the people involved must find it fun. And secondly, that they get to spend time on this for their CEO. Further the contact between the coordinators needs to be good, and the group has to meet occasionally and exchange experiences and support each other. The fourth thing is that they are nominated by their executive, it is important when working for the company that the CEO has the operational responsibility for achieving the sustainability objectives according to Domeij. She explains: *“Det är viktigt då de arbetar åt bolaget och det är VD:n som har det operativa*

ansvaret för att förverkliga de mål vi har på hållbarhetsarbetet så måste det vara så att VD:n har gett dem det här uppdraget.” (It is important when working for the company and it is the CEO who has the operational responsibility for achieving the objectives we have regarding the sustainability work so it must be that the CEO has given them this assignment.) Because, then it receives a much higher profile which will increase the heaviness internally Domeij explains. This is especially of importance when it is heavy long-term demands, then the executives are of major significance, their way of pinpointing by participating in groups is an essential marker to the employees to take the work seriously. On an external level the consultation with various organizations for different aspects of sustainability, customers and the media is essential.

Each day means a lot of communication for Domeij. Depending on what issue that has to be taken care of Domeij is communicating with different persons and departments, from specific managers or in other cases the people working on specific issues, with the environmental coordinator who is more general in their companies, and in some cases with the CEO. Domeij have much contact with the environmental coordinators whose main task is to support the company and CEO to reach the goals of the sustainability program. They also have to come up with initiatives and develop new ideas for implementing these objectives and to help the other companies and support the environmental work internally. Domeij explain that they are a bit like an extended arm to her, and indeed an extended arm against their executive.

Tough to reach a superior sustainable environmental work is to get commitment in all companies according to Domeij. At Axfood the most difficult part is the size of the organization and that it is also geographically dispersed, and thereby to cope with the educational part and the commitments that has to go all the way within the group. A corporation of this size has difficulties with all kinds of implementations in the stores and it is a constant challenge to manage the goals from the head office. Domeij says that: *“Det är ju så många människor man behöver nå ut till när det är så många tusen anställda, det är ju 20 arbetsplatser, så det är kanske den största utmaningen att det är så stort och så spritt geografiskt.”* (There are so many people you need to reach out to when there are so many thousands of employees, there are 20 job locations, so it is perhaps the greatest challenge that it is so large and so dispersed geographically.) To get people working in the stores they have to have enough knowledge to dare to pursue these issues which is a greater challenge than the technical part. The funniest part with her job is that it is developing, that it is moving forward all the time and new things happen. Especially fun, according to Domeij, is when new things

are happening without her suggestion of them, it is at that time she considers her work as a success. For Domeij it is important to be a catalyst, to inspire and ensure the environmental work and processes are continuing.

If Domeij could she would like to have more time and resources for education of staff and for social audits. She cannot say that there is any specific area that she would like to have more knowledge about. Instead Domeij mean that it is more about keeping up with what is happening, new things on the research side and external environmental monitoring. It can be very specific things that she feel a need to know and learn more about e.g. right now they are trying to learn more about how cocoa production in West Africa is working.

Domeij experience that top management is listening to her even more than she first thought they would. She also experience that things get realized faster then she expected. She thinks that this might be because she is comparing it to politics where the processes are slower and requires a lot of patience. Domeij imagine that she got a larger hearing than first thought because there might been an internal need, as some people felt that they wanted to engage in this issues and it might became more socially acceptable when she started. Since she has been working with many different organizations Domeij believe her experience and background may have helped her to gain possibility to influence, both because of working with various issues but also because of working with different types of people. These are experiences that Domeij thinks are obligated to manage her job and to be able to get through difficult situations where there may be conflicts of interests. She states that it is not only educational and academic, but the habit of finding different ways that is important to hold. She has been practicing politics which is considered a good experience when managing a large organization and people with various needs.

5.2.4 Krantz, Willys

Krantz position as environmental coordinator can be described as an extended arm toward Åsa Domeij who is environmental manager at Axfood. In order to manage the environmental management work the Axfoods Group (Willys, Hemköp, PrisXtra, Tempo/Handlar'n, Dagab and Axfood Närlivs) has environmental coordinators at all companies and Krantz explains that he helps Domeij navigate inside Willys. Krantz describes that environmental issues often span quite large areas and he considers his area of expertise to be sales and assortment issues with an environmental aspect but that he is less good at waste disposal and electricity issues.

The environmental coordinators are, according to Krantz, central to successful environmental management within the company. All of them have different environmental areas of responsibility and this group together with Domeij is a good mix of competences that have the ability to handle a wide range of questions in this field. They have regular meetings where they discuss a current and overall issue which is a valuable working form. This contributes to the group having an overall picture and to not just seeing their own little area of focus which Krantz describes is a positive effect. Krantz considers Domeij to be a person with character and authority, with a whole lot of knowledge on environmental concerns and issues and he believes that it is much thanks to her that environmental issues are run the way they are at Willys and Axfood today. Krantz states that: *"Jag hade varit rädd för att ha någon på Willys som är miljösvarig men som inte greppar alla frågor. Då hade det blivit en PowerPoint människa som liksom inte kunde göra så mycket saker och ting."* (I would have been afraid to have someone at Willys that is environmentally responsible, but that does not grasp all the issues. Then it would have been a PowerPoint person that could not do so many things.)

Krantz explains that when Domeij started her work at Axfood she planned for long-term work for the Axfood concern which has resulted amongst other things in Axfoods sustainability program. The program includes a lot of tough and distinct goals and one of them is to certify the entire Willys chain according to the environmental label "Bra Miljöval" by Svenska Naturskyddsföreningen. Krantz know that they are not the first ones to certify their stores but are pleased that this is the first time a whole chain of stores are certified according to "Bra Miljöval". Krantz has worked a lot with this lately and the goal is to be done by June 2011 and then they will start to advertise it to customers and other interest groups. Krantz is well aware that Willys has a low green profile to customers and claims that one of their greatest goals right now is to become green in the customers eyes.

Social and environmental issues are important to Axfoods top management, partly because of the engagement of the main owner Antonia Axelsson Johnsson. There has been a lot of talk and little action the last couple of years, according to Krantz, who now feels that this is about to change and it is done both for the environmental and for company profit. He describes a meeting he attended together with the other environmental coordinators and Domeij and the positive surprise that he experienced when Axelsson Johnsson was there. This showed that she believes this is an important issue since this is the first time Krantz has ever meet her, even though he worked for the company for 20 years, it also shows that he as environmental coordinator receives attention from top management which is perceived as an incredible

motivator. He considers that he has the attention he needs from top management but it might not be quite the same at local colleagues' level.

Dedicated employees are described by Krantz as the most important thing when coordinating environmental management in product chains, especially in the stores itself. He explains that there might be a couple of persons at the office or centrally that are less willing to change but not so much in the stores. One of the greatest challenges is considered to be the education of store employees since they so far has not trained them especially much or engaged them adequately. All stores have one employee that is environmentally responsible and that Willys/Axfood will succeed when they have been able to make these persons "environmental champions". To succeed employees need to be passionate about their task and they need to have knowledge which is why Krantz is pleased that Domeij is environmental manager at Axfood. Right now they are working on an educational package for their employees. Krantz believes that his work is useless if there is no one at the store level that has knowledge and interest in continuing this work. Other areas that Willys are currently working on is amongst other things to help their customers become more environmentally friendly by different information signs that inform customers about which product choices that are considered to be best in an environmental aspect.

Krantz experience that he has the ability to influence environmental management in product chains but does not think he has any need for it. Willys strategy is not to have the widest product selection but to have the cheapest food bag. In that way Krantz explains that the cheapest food bag is also the cheapest ecological food bag. Because of the fact that other stores invest in wide product selection there is no need for Willys to try to affect producers to develop new products since they already are satisfied with the products that they have chosen for their stores, they do not need a wide product selection.

The more difficult an issue is to penetrate the more important it is to know the company and to be able to network according to Krantz. Since he has worked at different positions in the Axfood Group for a long time he has the advantage that he knows quite a lot of people and has the ability to find ways around problems. He says that: *"Och hade jag kommit utifrån och inte haft det nätverket som jag har idag, då hade jag haft det mycket, mycket jobbigare."* (And had I been hired externally and not had the network that I have today, then I would have had a much, much harder time) It is explained by Krantz as important to have an ability to make people do things, there is neither time nor competence to do everything by yourself, and

that means that it is of significance to manage to delegate tasks. During the years at Willys Krantz has built an authority and when he delegates things he also gets results. This authority has facilitated things for him given that environmental questions are prioritized centrally but still has low priority at office level, which means that Krantz often has to argue for his cause. It is easier to get other persons involved and engaged if they think it is fun and if they understand why they should engage but at the same time Krantz realizes that it is impossible to convince everyone around that environmental concern is the most important thing, there is not enough time for that.

5.2.5 Robertsson, Coop

Robertssons work consists, among other things, of making sure that all Coops food chains follow their sustainability policies which means that there are goals for ecological products, how to perform when it comes to refrigerators, freezers, transportation and so on. Robertsson explain that they have criterions for their products and that it is possible since they have their own brands, additionally external brands or products that do not comply with these criterions are not purchased. Sustainability and environmentally sound products is the business idea of Coop which is shown by their product and Änglamark is the spearhead of this work.

Influencing environmental concerns in different product chains is what Robertsson is working with the most, to implement environmental responsibility into everyone's daily work. Ten – fifteen years ago they started to integrate environmental concerns into all positions instead of having an environmental stab as they had before. That way all functions in the value chain takes responsibility for the sustainability goals. It takes continuous education and support to make sure that sound decisions are made. According to Robertsson everything that the company does has connections to the surrounding environment outside the company, for example; if there are goals for ecological sales this means that they help to decrease the use of chemicals in Swedish and in international agriculture. Every action has consequences and it is important to be able to see these consequences. Also, Robertsson explains, Coop has an informative role towards their customers, since they have felt a need to educate their customers about ecological food and responsible sales. For example, if Coop sells ecological eggs, hens will continue to lay eggs even if the market is bad, therefore Coop need to inform customers about the ecological eggs since they have a responsibility toward their egg producers to make sure there is a demand for these products. The development of, in this case ecological eggs, is the result of a lot of investments for the producers. Robertsson points out that it is because of investments like this by Coop that ICA and Axfood sells ecological

products and that it would not have been possible without Coops initiatives to invest and develop. Other companies are not willing to do these kind of investments but Coop are because they do what their customers demand from them.

When coordinating environmental management Robertsson consider that it is important to know the company's strategy and not to lose focus and says that it is okay to move slow and not get caught up with every trend out there, because then there is a risk of losing credibility. This is one situation where Robertsson can be of help to his company, pointing out which things Coop should focus on and what could be disregarded and he can provide insight into what efforts should be taken or not. The difficult part of this is that since it is a retailing business many persons inside the company has focused on sales and not always on the environmental part of it which means that whenever there is new top management inside the company Robertsson feels that he has to start over again and talk about the same thing he has done for 21 years. In his early career he did not mind as much since he had a lot of willpower but now he rather thinks it is a bit annoying to do it all over again. The upside of environmental management is according to Robertsson to see that the ecological sales increases and the positive response that they receive from their producers and other interest groups who thinks they do an amazing job, the personal response they get as well as a big pay check Robertsson adds.

To be successful with the environmental management that Robertsson conducts he has put a lot of effort into communicating with top management at other companies, to convince them to produce ecological products and that it is in their own interest. In the beginning many companies thought ecological products would outpace their other products. Robertsson had to persuade them that it is better that they provide an alternative product so that customers can choose for themselves and that they would get bad publicity if they did not provide an alternative product because this would show that they lacked initiative. Robertsson communicates with personnel within all levels of different companies in product chains, mostly with top management since they have the ability to make strategic decisions. This kind of work took a longer time 15-20 years ago when for example Arla did not understand these issues, now they have a different situation and companies understand the benefits of having ecological products.

Today Robertsson is mostly on the marketing department working with Coops own brands and is not part of any top management teams but explains that he still has access to all teams

if he wishes to raise a question or issue and does not think it is a problem that he is not a constant member of these groups. Since environmental concern is part of the business idea that top management has decided then there is no problem according to Robertsson to get attention regarding environmental issues. Since he has worked there for a long time and most likely done a good job Robertsson explains that he has a rather unlimited role inside the company. Even though his position gives him the ability to act rather freely he always base his actions on Coop strategy for environmental issues and does not act outside that plan. Robertsson consider his role as environmental manager could somewhat differ from other environmental managers and that he actually works with practically everything. Because of his experience and knowledge of the organization he feels he has the ability to get around the issues in a more flexible manner as well as has the ability to effect and develop for example tougher criterions for the purchasing department.

Robertsson first decline having a wide network but then explains that he is not modern in that way that he purposely has created a network, but admits that he knows a lot of peoples in the field, ministers et cetera and that it could be called that to have a network. In that sense Robertsson agrees he has both a national and an international network but he considers them friends.

5.2.6 Björkman, KF

It was, thanks to their members, for a long time ago that Coop started with their own product brand called Änglamark. In the sixties and the seventies the members demanded food that where grown without been sprayed with pesticides. Because of the membership and that they jointly owned the stores they had the possibility to put demands, and the people in the consumer associations had a responsibility to drive customers and members requirements. Björkman highlights that it is important that those who are not buying products that are good environmental choices should not have a bad conscience, it should rather be optional to buy organic products. The consumer associations can instead encourage good choices and provide information on reducing environmental impacts such as kilograms of pesticides spared from selecting organic options. Further, Björkman considers the consumers associations as a positive force that encourages information and promoting organic products. She do not want the customer to feel they are obligated to only buy organic products or give them a bad conscience. The usual customer just buys few organic products, but even so they show what they think it is of importance. When choosing an organic product Björkman says the customer

should feel proud and think no toxin, that is great, and thereby be happy to pay a crown more for it.

The most important persons for the consumer associations and Coops environmental work are the store managers and the employees according to Björkman. The consumer association is offering them environmental education, which submit them with information and give the employees knowledge of how the organic products can get a better location in the stores and promoted in a more efficient way. But also the subcontractors and their product assortments are extremely important according to Björkman for an efficient environmental management work. To have committed top management is of significance for environmental management, they need to want to work towards environmental goals and have an understanding. However, Björkman is mentioning, that they are in a special situation where they are a consumer cooperative whose values must be taken seriously and they have a social responsibility towards their members and their demand of an environmental responsibility. Genuineness of the management and everyone in the organization has to be established and committed which is of high importance, according to Björkman.

Björkman would like to have more time and resources to be able to familiarize with new facts, read studies and to understand the latest issues. Further, she also would like more time to look into various issues about what we eat. She considers it possible to stay positive because of having so many positive people to work with, as well as because of the feedback and the interest from the community. Björkman explains that: *“Det som är positivt är feedbacken jag får, både genom att försäljningen ökar och den responsen jag får från kunder.”* (What is positive is the feedback I get, both by sales increases and the response I receive from customers.) She is motivated by students who lives on limited budget but still manage to buy only organic products, consumers that are aware and make deliberate choices.

The consumer association is a member of various networks such as Institute of Food Research (SIK), which includes suppliers that are involved in the exchange of information. Another one that Björkman is a member of is the Food and Climate, which is a network with various companies. In these networks an information exchange take place which later on can be communicated to consumers. Those Björkman mainly work and cooperate with, both store managers and those working in other consumer associations in Sweden, have different educations and backgrounds. Björkman thinks that all education should include more environmental knowledge. But at the same she argues that it can be positive with different

backgrounds when combined with each other. She also stresses that they may possess knowledge "from the floor" for example, from store managers, which she as an idealist might lack. However, the difficulty of different backgrounds is that they may not know what clean elections mean or the meaning of an organic product.

Björkman feels like she can raise questions and receive top-management respond, but it is for the whole organization. The board has set a goal that they must work for a sustainable environment, which is very encouraging. It is important according to Björkman that top management is committed to the environment, because this commitment shows that it is significant and for real. It is important to stand up, says Björkman. The biggest problem is according to Björkman that we consume too much and she says that focus should be on less buying. She argues that the food industry is different from the consumption sector, since everyone has to eat. The only thing can be asked for is to not throw food, but to use it for something else or advocate that the date stamp is longer than what it says. The biggest problem is that there are more and more people on earth, living with a higher standard, which will use the limited resources of water and chemicals. Therefore, consumption will have to decrease and ecological sales will have to increase.

6. ANALYSIS

Below follows the analysis of the empirical findings and the state of knowledge. The analysis is divided into six themes; background, view of themselves and their role, perceived drives vs. struggles, perceived critical factors for coordination of environmental management, networks and communication and finally the chain perspective. Each interviewed respondent is referred to by their surname followed by the company name to facilitate understanding.

6.1 Background: Job experience & Education

From the respondents we receive a common picture that the life cycle coordinators often have wide and different backgrounds. All of them claim that working with environmental issues requires broadness and they also phrase that in general persons working in these positions have various educational backgrounds. Out of six respondents two, Krantz (Willys) and Robertsson (Coop), do not have an academic education. Instead they have within the company; both of them are saying that it is an unusual way of entering these work positions. Both Domeij (Axfood), Björkman (KF) as well as Robertsson (Coop) mention the fact that the grocery industry contains a lot of non-academic employees. From the respondents we understand that non-academics and academics both have a lot of knowledge, only, sometimes different kind of knowledge. The difference in background is also noticed among the life cycle coordinators colleagues. The environmental coordinators within Axfood all have different backgrounds and they are use to communicate and knows who to talk to. Krantz (Willys) experience a learning potential from his colleagues since they have different backgrounds. Iliefskis (SCA) colleagues usually have different backgrounds compared to her, they are mostly described as engineers and economists. At the environmental and product safety department Riise (SCA) explain that most colleagues have a similar educational background, either they have an engineering graduation or they are biologists. A group of people that work together has to have a good combination of both people and competences says Riise (SCA). Domeij (Axfood) consider it a challenge to understand the skill levels of different types of people, especially since the entire industry is mostly non-academic. The educational background between Domeijs (Axfood) colleagues is very diverse.

The picture we receive from our respondents and their backgrounds are corresponding with the one given in the state of knowledge. Earlier studies show that the field of corporate environmental management is fragmented and lack agreement of what is relevant or not (Dobers et al., 2001), this is supported by our respondents' diverse backgrounds. The life cycle coordinators diverse backgrounds are also in line with earlier studies phrasing that there

is no precise learning path to these environmental jobs and people with different backgrounds and educations are competing for the same environmental job positions (Baumann et al., 2005).

Some of them admit that they would like to improve their knowledge or enhance their understanding. For example Björkman (KF) describes how she would like to learn more about chemicals and their impacts. During her employment at the consumer association she has taken distance courses to receive a deeper understanding of how farmers are working. Krantz (Willys) consider that he can learn more, especially about environmentally sound product choices, which also Robertsson (Coop) would like to learn more about and mention the connections between food, agriculture and environmental consequences as interesting. Further, Krantz (Willys) is interested in learning more about social issues. Iliefski (SCA) stress that there are always new things to learn. Others states that they are feeling assure and not is missing out on knowledge, for example Riise (SCA) who is declaring that she does not need to complement her educational background.

Before her current work position Björkman (KF) was working as an informer and took some courses in environmental science, to improve her education in public relations. Björkman (KF) states that the combination of economics and environmental science knowledge is important to achieve a long-term thinking in environmental issues. Riise (SCA) is educated both as a biologist and a software engineer, and she has been working at different department within the organization, and also been taking additional courses while working at the company. Iliefski (SCA) is educated as an engineer and has obtained many different positions at the company before the one she is having today. She does not think that additional education would give her more influence in her daily work instead she believes that it depends more on personality. Verification of holding different positions within the same company before the position as life cycle coordinator is given comparable is given by Robertsson (Coop) who has nearly ha all positions in the company. Also Krantz (Willys) have had many different positions within the business since he started there direct after he finished school. From the beginning Domeij (Axfood) is educated as an agronomist, but added some courses in economics, chemistry and biology and have also complemented her studies with environmental law. Domeij (Axfood) has been working very broadly in different sectors, from private to public, with environmental issues. Riise (SCA), Björkman (KF) and Domeij (Axfood) are declaring that it was their interests, of either environment and economics, or environment and food, which made them apply for their current job position.

There is a perception that it is important to know a great deal to work with environmental issues, this can be expressed by the life cycle coordinators experience of a need to supplement their educations with additional courses (Johansson, 2008) which is met by the interviewed respondents, both their comprehensive backgrounds and also their willingness to acquire even more knowledge.

In the state of knowledge characteristics of an environmental leader are described, such as motivational skills, interpersonal skills, but also a broad environmental and industry knowledge (James & Stewart, 1996), skills and knowledge which can be obtained by a wide education or by working in a company over a long time. The state of knowledge is thereby terming why the life cycle coordinators backgrounds are important for them in their environmental job position. And in the same time is it saying that an environmental executive is someone whose educational background and experience command respect among others (James & Stewart, 1996). It appears from both the state of knowledge and by our respondents' backgrounds that a number of factors including personal attributes, background, company and broad industry knowledge and social circumstances are impacting success in their job positions regarding life cycle coordination (James & Stewart, 1996).

6.2 View of Themselves and Their Role

From the respondents we found that working with environmental management demands a broad knowledge base and a great understanding. It often includes both environmental and social responsibilities and various work tasks. Domeij (Axfood) is describing the environmental management work she perform as broad, including everything from detailed issues to wide global strategies. Iliefski (SCA) believes that much knowledge could be learned gradually like she has done with some areas, and argues that some could not be learned in school. Also Domeij (Axfood) state that to be able to get through difficult situations it is not only academic knowledge that of importance, instead a habit of finding different ways that is important to hold, which she learned participating in the political field. Compared to his colleges Robertsson (Coop) considers himself as unique since he started his career as a store employee whilst most people in comparable job positions are academics. But this is not something Robertsson (Coop) consider to be a problem, except that others might lack knowledge about the retailing business and he might need to be a little more of an academic. Krantz (Willys) describes that environmental issues often span quite large areas and he considers his area of expertise to be sales and assortment issues with an environmental aspect but that he is less good at waste disposal and electricity issues. Domeij (Axfood)

consider that she has a good foundation of experience for her job because of a very good width.

The respondents' view of themselves and their need to obtain more than academic knowledge to coordinate environmental management is confirmed in the state of knowledge. It is illustrated that persons holding various environmental positions within a corporation over a longer time are possessing competences in addition to their environmental expertise which is helping them to cope with the challenges that come with their job position (Baumann et al., 2005). It is also described that problems can arise since the job positions are rarely defined but are more a skill that can be found in professionals with diverse training (Johansson, 2008).

All of the interviewed gave an impression of being inspired or that their job position required them to be positive, even if some of them not explicitly said so. For Domeij (Axfood) it is important to be a catalyst, to inspire and ensure the environmental work and processes are continuing. Iliefski (SCA) believes that the environmental department has a role to inspire others to take action. She wants employees to work on their own and want them feel comfortable to make their own decisions. Which is strengthened by Krantz (Willys), who states that his work is useless if there is no one at store level to take on responsibility and also have the knowledge for it. Robertsson (Coop) does not think of himself as the person who motivates people around him, of course it happens from time to time, but he explains that he is well known within the company and does not have to be that person. Instead Robertsson (Coop) considers himself to be a source of knowledge and corrector since many colleagues ask for his opinion in matters of what is right or wrong. Riise (SCA) considers herself as a person who is tough and tends not to think of things as difficult or impossible to solve. Björkman (KF) explains that she has to be positive, and that she cannot be turned down, feeling like she needs to have a positive approach even when faced negative by those who not believe in these concerns. Björkman (KF) states that she can sow a seed and raise the ecological issue among the consumers and she emphasizes that it is important not to give up.

In the state of knowledge people working in these positions are described as having the role to encourage others in the company and to some extent as enthusiastic agents of change (WBCSD, 2005). Motivational skills, interpersonal skills, broad environmental and industry knowledge are other characteristics of a leader (James & Stewart, 1996). Both by our respondents and in the state of knowledge it is confirmed that for success in the coordination

of environmental management a number of factors has to be obtained including personal attributes, background, company circumstances and broad industry knowledge.

Domeij (Axfood) believe her experience and background helped her to gain a possibility to influence. Domeij (Axfood) feels that the top managers are listening to her, actually more than she first thought they would and also experience that things get realized faster than expected, which might be because she compares with politics. There is no problem according to Robertsson (Coop) to get attention regarding environmental issues since has access to top management if he wishes to raise a question. Robertsson (Coop) consider that he can be of help to his company since he can point out which areas Coop should focus on and he can provide insight into what efforts should be taken or not. That environmental work not is done by one single person is confirmed by Riise (SCA), who states that environmental management coordination requires more. Domeij (Axfood) could imagine that she got a larger hearing than first thought because there might been an internal need. Iliefski (SCA) points out that it is not always that she agrees with others, but even so, she can always learn from them. Iliefski (SCA) believes that the environmental department should not do all the work but instead they have succeeded when different departments are taking on environmental issues without their involvement, which is supported by both Domeij (Axfood) and Robertsson (Coop). Robertsson (Coop) explains that he has a rather unlimited role inside the company since he has worked there for a long time and most likely has done a good job.

According to Lober (1999) there are organizational structures which can enhance entrepreneurial activity such as management support, something that also is mentioned by our interviewed when they are arguing that they have possibilities to raise questions. In the state of knowledge it is pointed out that entrepreneurship and intrapreneurship can be a way to champion environmental concern within the organization and that it can facilitate for changes in both current values and organizational culture (Keogh & Polonsky, 1998 refers to Drumwright, 1994). By the interviewed respondents and in the state of knowledge it is affirmed that entrepreneurs can be helpful when wanting to change things in order to improve environmental behaviors and impacts. In contrast it is stated by some of the authors in the state of knowledge and confirmed by the empirical findings that this work and these innovations are not made by one person, but instead a combination of top management as well as other teams inside or across organizational limits and that there is no solitary person or champion that creates this on their own (D'Amato & Roome, (2009).

6.3 Drives vs. Struggles

Diverse personal drives are described by those interviewed. Iliefski (SCA) appreciate that she is learning a lot of new things while communicating with many different people at various departments. Further Iliefski (SCA) is motivated by the environmental field in itself, and the fact that a small enhancement could make a difference in the world. Additionally Riise (SCA) finds it stimulating to work transversally across different areas of expertise and find everything is enjoyable with her job. Not only working within the company's different departments, Riise (SCA) also describes, that cooperating with environmental questions on an international level to find solutions is making the job interesting and motivating. Krantz (Willys) describes that he gets his personal motivation from the simple and cleaver insight he receive from his children. A personal drive for Björkman (KF) is consumers that are aware and make deliberate choices, and from persons buying only organic products even if they are living on a limited budget, such as students. For Domeij (Axfood) the most motivating part is to explore that the environmental management work develops and when it is moving forward. Especially Domeij (Axfood) is pinpointing it as fun when new things are happening without her suggestion of them; it is at that time she considers her work as a success.

Iliefski (SCA) affirms that she is motivated by attention. During the latest years she has received positive feedback and feels that she is able to choose what the company should focus on. Attention from top management is both by Krantz (Willys) described as an incredible motivator and by Robertsson (Coop) argued to be a drive, when positive feedback or progress is given to environmental issues in general or to him personally. Additional drives, according to Robertsson (Coop), are positive response from various interest groups, exploring that ecological sales are increasing and a big pay check. Björkman (KF) gets motivated by both positive feedback and sales increases. She is clarifying that even if it is struggling not to be able to possess knowledge in all environmental problems, the contacts and interest from the community makes it possible to stay positive.

The diverse drives given by the respondents are in line with the state of knowledge, where the term ecopreneurs is established and used for those making environmental development within the core business. Ecopreneurship is persons with an environmental lens and are generating value-creation through market-oriented and personality-driven environmental innovations (Schaltegger, 2002), pointed out as those that are strengthened by opportunities in their surroundings (Keogh & Polonsky, 1998, refer to Drumwright, 1994). Entrepreneurs have different kinds of commitments which impact their visions of environmental concerns (Keogh

& Polonsky, 1998). This is by our interviewed respondents expressed by their diverse personal drives and motivators, from their own children to the whole environmental field and their work tasks. Several of the interviewed respondents described that they are motivated by top-management support, which also is corresponding to the state of knowledge, where Lober (1999) describes management support and also own decision making possibilities as enhancing entrepreneurial activity.

Iliefski (SCA) mention that addressing and having contact with different people at various departments makes it impossible to have a constant way of working, which both can be seen as motivating but in the same time as a struggle. Often Krantz (Willys) feels that he needs to fight for his cause, experiencing a lot of headwind, but in the same time argues that this is fun and motivating. Krantz (Willys) is struggling with a dilemma between his main task at the marketing and campaigns department and his work as an environmental coordinator. He finds that environmental concerns have a low priority at office level, which makes him have to manage a lot of discussion and argumentation for ecological products. Also Robertsson (Coop) find it struggling that many persons within the company and in the retailing business are focusing on sales instead of the environmental part. Additionally, Robertsson (Coop) finds it struggling to repeat the same argumentation, for example when there is new top management, and feels as he has to start over again. But, this he experience lately as a struggle, earlier in his career he had a lot of willpower.

The interviewed are describing that they are repeating themselves, working in headwind, they have to argue for their cause and indicate that their environmental goals are seen as in opponent to the actual aims of the business, in line with the conclusions drawn in the state of knowledge saying that persons working in these positions often describe themselves as fighters (Hroch, 2002). It is also possible to distinguish how the interviewed respondents are motivated by this struggle to make other understand the importance of environmental concern and in their trying to realize a change, when they refer to this as fun. Persons working with life cycle coordination are affirmed in the state of knowledge as expected to act as agent of change, and are described as having the role to encourage others (WBCSD, 2005). From our respondents this is confirmed, they are arguing that what they are struggling with, in the same time is fun and that they get motivated when others suggest improvements and when changes takes place without their involvements. In the state of knowledge we found Scharper (2002) referring to Pinchot (1985) describing people driven by this as intrapreneurs. A number of characteristics are given by Gibb (1996), referring to Caird (1993), when identifying a

intrapreneur, such as making own decisions, being committed and flexible as well as having the ability to persuade others, which also is consistent with what is mentioned by our respondents as motivating and encouraging in their coordination of environmental management. Individuals working with life cycle coordination need to have the capacity to possess a desire to learn from customers, consumers, suppliers and colleagues according to our state of knowledge (WBCSD, 2005). This is found motivating from the respondents, many of them are describing this as an important part of their work, but in the same time something that they are struggling with.

In the other hand, Iliefski (SCA) does not find that there are any problems or difficulties working with coordinating environmental management. But she does consider it challenging that the company is expanding and getting bigger, since there will be even more persons to reach out to. She pinpoints that it will make it more difficult to communicate at an appropriate level. Also Domeij (Axfood) direct that one of the major problems is that the company is large with thousands of persons to reach located dispread geographically. Krantz (Willys) describes that one of the largest challenges and struggles is the education of store employees and to engage them adequately. This is something that also Domeij (Axfood) indicate as challenging. According to Riise (SCA) there are always areas where she is wondering if they have done enough, describing that there is always questions that could be asked as should we be on our guard or could we do this in another way and so on.

Skilled people are described both in the state of knowledge as by the interviewed respondents as one of the most valuable resources for an organization, skills that can be built by training in social and environmental dilemmas (WBCSD, 2005). Further, both the state of knowledge and our respondents demonstrate that improved environmental management depends on actions by non-environmental staff that has to be persuaded into actions (James & Stewart, 1996). By our interviewed respondents it is determined as challenging to reach out to all employees with information and education. This is confirmed by the state of knowledge describing that there can emerge different meanings and ways of working with environmental issues and sustainable development as part of various professional practitioners (Johansson, 2008).

6.4 Critical Factors for Coordination of Environmental Management

During the interviews certain things was revealed as critical for coordination of environmental management in supply chains. Robertsson (Coop) was appointed to his position as

environmental manager by the CEO which Björkman (KF) state it importance and adds that top management should have an understanding of, and be willing to work towards environmental goals. This is something that the majority of respondents claim to be important. Especially in large companies says Riise (SCA) who states that it is essential that top management send a clear message that environmental issues is a priority otherwise it will be difficult to receive necessary resources. Additionally, Riise (SCA) believes that success only can happen if top-down management is applied.

Both Krantz (Willys) and Domeij (Axfood) describes environmental coordinators meeting that Antonia Axelsson Johnsson attended. This was seen, by Krantz (Willys), as a positive surprise and an incredible motivator when experiencing that they were getting attention from top management. Domeij (Axfood) thinks it sends a huge signal that Axelsson Johnsson attended the meeting. Domeij (Axfood) state that CEO support is central and that when appointing coordinators it is of great importance that they are appointed by the CEO, it gives the assignment a higher profile, increases the internal significance and shows the employees the importance of their work. Robertsson (Coop) states that it is important that everyone takes the environmental issues seriously and that there is a good feedback to top management.

In the literature we find concurring statements that claims that the secret of success lies in top management support, company understanding and general management abilities (James & Stewart, 1996), things that the interviewed respondents has claimed to be of importance.

Another topic that was revealed as critical for coordination of environmental management in supply chains is committed and properly educated personnel. Krantz (Willys) and Domeij (Axfood) believes that persons working with environmental issues need to have an interest in the subject; otherwise it will be difficult to engage in the concept. This is especially true when it comes to stores levels, Krantz (Willys) state that his work is useless if there is no one at store level that have knowledge and ability to continue his work. The environmental coordinators at Willys, such as himself, are central to successful environmental management within the company he says. Domeij (Axfood) adds that contact between the coordinators needs to be good and they have to exchange experiences and support each other. An essential condition is passionate employees which in turn require education says Krantz (Willys). Domeij (Axfood) state it is great to have an academic education as a foundation but believe that it is even more important to have a broad understanding rather than to be narrowed and specialized. Björkman (KF) agrees that the employees and the store managers are central for

success. She also argues that education is considered important. Genuineness and commitment is also considered important for the staff to have according to Björkman (KF).

Education is a frequently mentioned critical factor and Iliefski (SCA) says that education hopefully provide a basic methodology to solve problems and to see possibilities. According to her it is important to know the technical parts from school. But also essential to be able to explain environmental issues in a way that employees understand how environmental concern are related to their area of expertise as well as to bury the myth that environmental issues are more complex than other areas; all areas are complex in their own way according to Iliefski (SCA). Riise (SCA) says that a broad educational background facilitates an understanding of different ways of communicating and to easier find solutions. It is more important that those who work together are different as people than what kind of educational background they have because different ways of thinking is important says Riise (SCA) but makes clear that this is not typical for an environmental department, instead something for organizations in general.

The literature in the state of knowledge discusses the importance of environmental education and how skilled people are becoming companies most essential resource (WBCSD, 2005), that it is seen as vital to have broad knowledge to work with environmental issues and that this might be the reason for why life cycle coordinators often feel the need to supplement their educations (Johansson, 2008), that the education for environmental jobs are unclear and thereby the persons working within the field often have very diverse backgrounds (Baumann et al., 2005), which is confirmed by our interviewed respondents. The respondents also describe how there are other skills than educational once that are importance, which also concur with the state of knowledge that illustrate that often experienced environmental personnel have additional competences, as well as diverse training, which help them to cope with the challenges that come with their jobs (Baumann et al., 2005, and Johansson, 2008).

Several respondents, such as Robertsson (Coop), Krantz (Willys) and Riise (SCA), points out that a functioning working structure is important. Robertsson (Coop) says that structural transformations often lead to a discontinuity in sustainability issues which means that he often has to put a lot of effort to make sure that other people do their job. He states that one of his main job assignments has been to implement environmental responsibility into everyone's daily work. The mission has been to integrate environmental concerns into all positions instead of having an environmental stab as they had before. According to Robertsson (Coop)

it is also important to know the company strategy and not to lose focus because this could lead to decreased credibility. Krantz (Willys) points out the importance of having environmental issues located within sales and marketing because otherwise other departments would have to effect the sales and marketing department first. Also Riise (SCA) agrees that structured environmental management is critical to achieve a coordinated and effective environmental work in product chains and claims the importance of everyone working in the same direction.

Structured environmental management is something that also the literature holds important, social environmental concerns have become an important business function and the persons working with these issues are expected to act as agents of change and develop structures and ways of working to maintain with the organizations sustainable objectives (WBCSD, 2005). And that organizations has to be structured to be able to identify opportunities given by environmental strategies (Russo, 2008). Additionally it is described in the literature how in companies where the environmental strategy is integrated, environmental concern will move from a specialized department of the organization into the core of the organization and that there the environmental departments function will be more as an agent of internal change (Russo, 2008), which coincide with the observations in the empirical findings.

Further Riise (SCA) explains that it is essential to know the entire product chain in order to identify where work needs to be done. Riise (SCA) describe that if you work in a structured way then you can affect the entire chain, which can be done using life cycle assessment (LCA). A good understanding of the business and to know the different parts of the value chain is vital when coordinating environmental management in product chains says Iliefski (SCA). Commitments in all companies are, according to Domeij (Axfood), critical to reach a superior sustainable environmental work as well as consultation with various organizations, customers and media. Björkman (KF) also has a supply chain perspective and says that subcontractors and their product assortments are extremely important.

Many authors concur with the supply chain management approach that the interviewees has described, and point out the importance of holistic systems thinking (D'Amato & Roome, 2009, referring to Waddock, 2007), the importance of seeing small problems in the broader perspective (Roome, 1994; Frankel, 1998, referred by D'Amato & Roome, 2009), having a cradle to grave approach as necessary for obtain more sustainable production and consumption patterns (Rex & Baumann, 2008) and to apply education among the companies in the supply chain so that they can see and understand the important links that exist between

the companies in the supply chain and to environmental supply chain management (ESCM) approach where all companies in the supply chain cooperates and builds closer relationships (Welford, 2003).

6.5 Networks & Communication

The ability to network is one of the things that the interviewed mention as important when coordinating environmental management. Robertsson (Coop) says that he knows the company well which is an advantage when developing environmental and sustainability issues. He feels that his role as environmental manager could somewhat differ from other environmental managers, that he actually works with practically everything and has the capacity to get around issues in a flexible manner because of his experience and knowledge. Robertsson (Coop) has both a national and an international network but rather considers them friends. Krantz (Willys) agree that it is important to know the company and to be able to network. Since he has worked inside the company for a long time he knows a lot of people, has a network and therefore the ability to find ways around problems. It is explained by Krantz (Willys) that the ability and authority to make people do things and to delegate tasks is important, which he has gained after his many years within Willys. A large network, says Iliefski (SCA), is a way to facilitate communication and to reach out to people. It is also central to have continues access and contact to different management groups, people and colleagues to be able to do the job efficiently but for Iliefski (SCA) it is not important to be a constant member of top management. She describes how the environmental department transfer information between departments, talk to the different top management groups, have coordinators at the factories, work in cross-functional teams where team members also acts as ambassadors for the environmental department. These examples show the importance of networking and having a lot of connection to other persons and teams. At Axfood they also have coordinators located within the different companies and Domeij (Axfood) sees them as an extended arm to her and she has a lot of contact with them. She, as well as Robertsson (Coop), describes how they work rather freely inside the company and has the possibility to influence and raise issues on their own. And Domeij (Axfood) believes that her experience and background probably has helped her to gain influence, be able to handle difficult situations and finding different ways around issues which is considered important. Riise (SCA) explains that all departments have a position or a person who have contact with the environmental and safety department which is needed for achieving effective coordination of environmental management. Further, she explain that large companies have a number of

functions, projects and groups working with coordination of environmental management, not just one person. Björkman (KF) describes how the consumer association takes part in multiple networks where they exchange information and discuss different issues, she works together with other specialists who are experts in other areas and they have eco-ambassadors. Björkmans (KF) works together with them to inform customers about their choice of products.

The ability to network and to find ways around problems are highlighted by the respondents and the state of knowledge that point out that managers working with sustainability issues should be able to network and have access to developed networks (Van Kleef & Roome, 2007, referring to Brown, 1997, and Clarke & Roome, 1999), that networks are platforms for exchanging information and ideas and that heterogeneous network provides the best learning and information potential (Van Kleef & Roome, 2007) and not all networks are open for everyone to see (Jørgensen & Hagelskaer Lauridsen, 2005, while referring to Jørgensen, 2003). This is also concurring with what the interviewed says since they act in networks and teams but that this is not always something that they say explicitly. It is also considered important to have company knowledge and authority to get good results according to the respondents. Also the state of knowledge recognizes that educational background and experience provides the environmental executive with respect among others and that improved environmental management depends on actions by non-environmental staff that has to be persuaded into actions (James & Stewart, 1996), that innovation is the product of a combination between top management, executives as well as other teams inside or across organizational limits and therefore there is no solitary individual or champion that creates this on their own (D'Amato & Roome, 2009).

Communication is an often mentioned subject during the interviews. Björkmans (KF) work consists among other things of how the stores communicate externally and says that their job is to act as a positive force that encourages information to the consumers. External communication is something that Riise (SCA) thinks is interesting and stimulating even though it is considered difficult since they are unaccustomed to it. But, she explains, essential to communicate in the right way and to be able to verify those claims that are behind the communication. Iliefski (SCA) describes that their work with life cycle thinking (LCT) is a great part of their external communication and that it is important to communicate environmental issues so that other persons understand and become interested which all areas of expertise struggle with according to her. Communication is a prerequisite for coordination

she says, adding that she believes they have managed to do that quite well within SCA. Communication is also a large part of Domeij (Axfood) daily work, both internally and externally. On an external level the consultation with various organizations, customers and media is considered essential according to Domeij (Axfood).

Robertsson (Coop) prefer direct contact when it comes to external communication since he believes that it is better to communicate directly to each other rather. Communication with all levels of Coop and other companies are common for Robertsson (Coop) who says that he mostly communicate with top management when it comes to other companies in product chains since they have the ability to make strategic decisions. When it comes to communication the discussion often lead to the occurrence of language. Robertsson (Coop) believes that he uses a non complicated and simple language when communicating to others and does not think it is problematic to communicate. Riise (SCA) has recognized that there are different ways of communicating within different departments and both Iliefski (SCA), as well as Riise (SCA), states that communication has to be adapted and interesting to the recipient. The recipients need to find it useful and relevant, something that all departments have to work with. It is considered a challenge to communicate properly. Environmental management is considered a rather grateful job according Iliefski (SCA) since it is possible to communicate it in an interesting way. It is explained, by Domeij (Axfood) that information has to suit people with different level of skills and it is good to be familiar with various concepts to be able to discuss with different departments and people otherwise there is a risk of talking past each other.

The importance of effective communication is something that among others D'Amato and Roome (2009) while referring to Kerr (2006) and Roome (1994) point out as an important issue which it is also according to our interviewed respondents. Individuals interpret and translate ideas to fit within their frame of reference, which is declared both by the state of knowledge (Georg & Füssel, 2000) and by the interviewed. Both recognize the importance of correct communication that is adapted to the recipient so that it could be made use of. In the literature we find that firms will in the future search less for environmental specialists and instead more for environmental generalists who can phrase environmental issues in a language of finance, accounting and marketing constituents (Russo, 2008), that the language of environmental personnel often are foreign for members of other departments (Lenox & Ehrenfeld, 1997, while referring to Shelton, 1996), that environmental personnel often use non-business phrases and fail to communicate effectively to other parts in the organization

(Russo, 2008), which also the interviewed respondents has acknowledged. According to the literature the challenge for life cycle coordinators is to find out how to translate environmental issues in the context of their organization (Russo, 2008) and to communicate across different groups or networks and across the specialized language that different groups use (Van Kleef & Roome, 2007, while referring to Roome, 2001), create a mutual understanding (Lenox & Ehrenfeld, 1997) and understand that concepts can have different meaning to different people which is recognized in the empirical findings.

6.6 The Chain Perspective

All interviewed respondents mention the supply chain perspective and how they can influence environmental supply chain management, even if they sometimes use a different language, perspective or example. A majority of the interviewees state that it is important to have knowledge beyond the own company and to also consider the surrounding environment and the supply chain. Iliefski (SCA) states that sustainable solutions are a way of looking at the entire context and not just one part of the chain and that it is important to have a good understanding of the business and to understand that environmental concerns are spread across many different disciplines. According to Robertsson (Coop) everything that the company does has connections to the surrounding environment and it is important to be able to see those consequences. He also points out how all functions in the value chain should take responsibility for sustainability goals. Important for achieving coordinated and effective environmental management in a product chain is, according to Riise (SCA), to have a structured environmental management approach and to know the entire product chain in order to identify where work needs to be done, then the whole chain can be affected. It is also explained important that everyone works in the same direction.

Riise (SCA) finds that she can influence environmental management in product chains, especially through the ability to exchange information with suppliers and different departments. Iliefski (SCA) feels she has great possibility to influence environmental management in product chains both through her position as environmental manager, the environmental department and through participating in different cross-functional teams. Iliefski (SCA) describe that there are many different persons and departments that can influence the coordination of product chains but that they work a lot with the purchasing department which has great significance since they have a lot of contact with their suppliers. Björkman (KF) finds that she has opportunity to influence the environmental work; she receives and collects information from customers in order to change or add additional

products to the assortment. She explains that also consumers can influence environmental management in product chains by their choice of products. Björkman (KF) also keeps an eye on competitors to gather information about what kind of products they offer.

In contrast to the other respondents Krantz (Willys), even though he feels he could influence environmental management in product chains, does not think he has a need for it. Since they are already satisfied with the product selection and there is no need for Willys to try to affect producers to develop new products. Both Robertsson (Coop) and Domeij (Axfood) point out that they have the greatest possibility to influence their own brand of products. Further Robertsson (Coop) points out that since sustainability and environmentally sound products is the business idea of Coop this should show in their products. Both Krantz (Willys) and Domeij (Axfood) explain how they at Axfood and Willys have a sustainability program that amongst other things includes tough and distinct goals regarding the product chain.

When looking at literature regarding environmental management in product chains there are a lot of authors that point out the importance of having an environmental supply chain management (ESCM) approach in industry (Welford, 2003), that companies management systems requires knowledge of the environmental impacts throughout the whole life cycle of products (Jørgensen & Hagelskjaer Lauridsen, 2005), that for a sustainable development for the whole community, companies will have to learn to include multiple partners and have extended life-chains (Balkau & Sonnemann, 2010) et cetera. This state of knowledge coincides with what the interviewed respondents has described about the importance of a broad knowledge of the supply chain and that multiple persons, departments and organizations can influence the supply chain. Contrary, most authors point out that there usually is one company in the supply chain who can exercise more influence over the other companies than the other companies can (Seuring & Müller, 2008, referring to Handfield & Nichols, 1999; Schary & Skjøtt-Larsen, 2001) and that this company should take responsibility for other respondents in the chain (Dyckhoff et al., 2004, and Reinhart, 1999, and Kolk, 2000, and Bolwig et al., 2010). Lately there have been studies that see tendencies toward multiple actors that can influence the product chain (Nilsson et al., 2010). Whether there are one or more actors with more influence in the product chain is not mentioned by the respondents.

To facilitate understanding and to receive an overview of the analysis an illustration is given in table 2.

Table 2 Illustration of the analysis

	Background: Job experience & Education	View of Themselves and Their Role	Drives vs. Struggles	Critical Factors	Networks & Communication	The Chain Perspective
Iliefski, SCA	Environmental manager, engineer, worked within different positions at SCA.	No need for additional education, personality is important, the department an inspirer, possibility to influence, success when progress without her involvement.	<u>Drives</u> : transdisciplinary and meaningful work, top management attention, interesting field, learn new things. <u>Struggles</u> : No direct difficulties, no constant working model, struggle to reach out.	Good business understanding, effective communication, networks, adapted education.	The environmental department acts as a hub, work in crossdisciplinary teams, have ambassadors, adapted communication enables coordination, large network.	Look at the whole context, know the different parts of the value chain, understand environmental concerns in the product chain.
Riise, SCA	Senior scientist, engineer, biologist, worked within different positions at SCA.	No need for additional education, tough/stubborn, everything enjoyable, possibility to influence, many persons involved.	<u>Drives</u> : transdisciplinary, stimulating discipline, international cooperation. <u>Struggles</u> : to communicate properly.	Different personalities, broad know-how, diverse groups, environmental strategies, top management support, working structure, chain knowledge.	Different language between departments, many persons involved, adapted communication, external communication.	Structured environmental management, knowledge of the entire product chain.
Domeij, Axfood	Environmental manager, diverse work tasks, broad background; politics, public and private sector.	A catalyst, no need for additional education, possibility to influence, top management supported, success when progress without her involvement, good width, get around issues.	<u>Drives</u> : when actions are taken without her involvement, progress. <u>Struggles</u> : to reach out, education of everyone is challenging.	Top management support, right persons at the right positions, good communication, commitment education, broad understanding, chain perspective.	Communication that suites people with different skill levels (adapted), can learn from different skill levels, much communication, find ways around problems, contact with coordinators.	Most possibility to influence their own brands, dialog with suppliers.

	Background: Job experience & Education	View of Themselves and Their Role	Drives vs. Struggles	Critical Factors	Networks & Communication	The Chain Perspective
Krantz, Willys	Environmental coordinator, non-academic, worked his whole career in the Axfood Group.	Much headwind, finds ways around problems.	<u>Drives</u> : his children, top management attention, fight also fun. <u>Struggles</u> : fight for cause, headwind, education of everyone is challenging.	Company knowledge, networking, delegation of tasks, top management support, commitment, education, working structure, coordinators.	Could learn for colleagues with other competences, networking abilities, company knowledge, authority, find ways around problems.	No need to influence but could if he wants to.
Robertsson, Coop	Environmental manager, started his career as store employee, non-academic, worked within different positions at Coop.	Consider himself unique, well known within the company, can assign where efforts should be done, source of knowledge, top management supported, unlimited role.	<u>Drives</u> : progress of environmental issues, positive attention/response, top management support, sales increases. <u>Struggles</u> : focus on sales not environment, to repeat himself, argue for cause.	Working structure, know the company strategy, not lose focus, CEO appointed, everyone takes these issues seriously.	Knows the organization, get around problems, knows a lot of persons in the field (friends). Direct external communication, communication with top management, simple language.	Product criterions, every action has consequences, the whole chain should take responsibility.
Björkman, KF	Business developer (environmental issues), public informer, additional courses.	Has to be positive, works hard to influence, “sow a seed”.	<u>Drives</u> : positive feedback, sales increases, motivated customers. <u>Struggles</u> : too much consumption, communication between people with different backgrounds.	Understanding, knowledge, store managers and employees, commitment, top management support, chain perspective.	Members of networks, involved in exchange of information, could learn from differences in backgrounds between people, external communication.	Works to influence customers, suppliers, purchasers and the stores, member of networks.

7. CONCLUSIONS

Presented here are the findings made from the six themes in the analysis, based on the empirical findings and on the state of knowledge. This is followed by our final comments on the conclusions.

7.1 Findings

7.1.1 Background: Job experience & Education

From our analysis regarding background, job experience and education we conclude that individuals working as life cycle coordinators often have diverse and broad educational backgrounds, have personal skills that facilitate their work, as well as an authority that enables to get other personnel involved in environmental management. It requires broadness by education, but most of all we determine that it is essential with a broad business knowledge and understanding of social circumstances to achieve effective life cycle coordination. Moreover, we find the individuals in these job positions having a genuine interest working with environmental concerns. The descriptions given in the empirical findings concur with what is found in the state of knowledge.

7.1.2 View of Themselves and Their Role

Several conclusions are made from the analysis of the life cycle coordinators view of themselves and their role, such as working with coordination of environmental management requires an extensive knowledge base and broad industry knowledge as well as an ability to manage challenges using those additional skills, such as delegating tasks and negotiating abilities, obtained from working in an organization for a long time. Additionally, we find that these persons must find the environmental field, and the challenges it contain, motivating and fun. Conclusions can also be drawn that they need to have a positive encouraging attitude. We conclude that management support is considered important for enhancing entrepreneurial actions. Finally, we establish that there are people acting as entrepreneurs and that they can ease environmental changes within the companies but also that this work is the result of a lot of peoples work, not just one single person or department.

7.1.3 Drives vs. Struggles

In the analysis of drives versus struggles we discover that the personnel working with environmental management are motivated by different drives and are committed to their work by various factors. Most of all they are motivated by the fact that their work feels meaningful. We establish that the life cycle coordinators are finding attention both from top-management

as well as society as a drive, especially when their work is adopted. Additionally, we concluded that they are motivated by reliance to make own decisions.

We conclude that the life cycle coordinators are often fighting for their cause and are feeling that the environmental goals are in opponent to the actual aims of the business. The struggle to make others understand the importance of environmental concern is also found as a motivator. Particularly are they motivated when improvements takes place without their involvement. We also conclude that the life cycle coordinators are driven by communication with and a desire to learn from others in the same time as they need to possess an ability to persuade others into actions.

7.1.4 Critical Factors for Coordination of Environmental Management

From our analysis of critical factors several conclusions can be made. We find that CEO and top management support is vital, also company knowledge, interpersonal skills, committed and properly educated personnel as well as broad knowledge of environmental issues is essential factors for the coordination of environmental management in product chains. Education is important to be able to have and gain a holistic approach, it is stated as essential to know the entire product chain in order to understand important links and for identification of where work needs to be done. We also conclude that the environmental management work needs to be structured to be able to effectively apply influence and to manage to identify opportunities. Additionally we state that life cycle coordinators need to work as agents of change to promote environmental concerns.

7.1.5 Networks & Communication

It is clear from the analysis of networks and communication that the ability to network and to find ways around problems is important when coordinating environmental management. Networks enable information sharing and learning, as do communication. Effective communication is important and it means amongst other things to have a language adapted to the recipient. Again we find that life cycle coordinators that have company experience and respect among others have it easier to involve others to work in the same direction. We conclude that networking over traditionally boundaries is of high importance for functioning environmental management in product chains, something that the life cycle coordinators understand. Additionally we establish that companies in a large extent will search for environmental generalists to hold the position as life cycle coordinators.

7.1.6 The Chain Perspective

Both in the empirical findings and in the state of knowledge we find that in order to improve environmental management, life cycle coordinators need to have an ESCM approach and recognize that environmental issues are spread across many different disciplines. We find that a majority of the life cycle coordinators claim they can influence product chains. We conclude that environmental management is the combined work of many different people and departments who has ability to influence the supply chain, not just one single actor.

7.2 Final Comments

In this study, the aim was to clarify the profession that a lifecycle coordinator has at a visible firm in a product chain and assess whether there is an approach towards the life cycle coordinators or if there is an approach towards a coordinated web. We have not found that there is one single spider that is independently managing the coordination work. Instead it is performed by many life cycle coordinators which are, for an efficient coordination of environmental management throughout product chains, dependent on each other. This, in combination with how environmental concern is progressively getting structured in a way that integrates environmental management in the companies, there is less essential with a hub of environmental specialists and instead a demand for more spread environmental knowledge within the firms. This study shows that there is a progressing approach for a strengthened coordination web in the product chains.

Both in the state of knowledge and in the empirical findings it is shown that there are many life cycle coordinators and together they coordinate environmental management in product chains. Success in the coordination of environmental management can be seen as a product of a number of factors including personal attributes, background, company circumstances and broad industry knowledge of the leader and social circumstances. There are different approaches regarding how the coordination of environmental management should be handled and by whom. The main appreciation in the state of knowledge is of one individual or department functioning as an entrepreneur that mostly are the one managing the coordination of environmental management and realize environmental changes (Scharper, 2002; Hostager, 1998; Schaltegger, 2002; Gibb, 1996; Linnanen, 2002; Pastakia, 2002; Volery, 2002; Keogh & Polonsky, 1998). This main appreciation is not affirmed by this study. In our study it is shown that there is more than one person involved and that these life cycle coordinators can be located at different departments. There are more than one person holding entrepreneurial characteristics in product chains and together they are performing the coordination of

environmental management. No single individual in our study is identified as entrepreneur equitable to the one described in the state of knowledge. The result of this study instead indicate that emphasis is on a process focus, where it is the combination of people, skills, as well as communication and coordination between the life cycle coordinators that will lead to a successful coordination of environmental management in product chains.

We find it difficult to determine whether there are significant differences between how the converter and the distributors coordinate environmental management within the companies. As stated before this field is fragmented and hard to comprehend which is why e.g. the respondents' positions as life cycle coordinators differ between companies regarding both titles and job descriptions. We find that the respondents at the converter do not want to admit problems or difficulties when coordinating environmental management but that respondents at the distributors state that they sometimes struggle when coordinating internally. Life cycle coordinators at both the converter and the distributors claim that personality is more important than education, also affirmed in the state of knowledge. We find that personality of the life cycle coordinators has a noteworthy influence on the coordination, but also on how they perceive their work position and view difficulties. We notice a difference in how they convey themselves and how they perceive the field depending on their background and most of all depending on how long they have been coordinating environmental concern. There are no central differences found in our study that influence how the converter respectively how the distributors are maintaining the environmental coordination. However we establish that the distributors argue they have an informative role towards their customers and that they have to educate them about e.g. environmentally sound choices. This is not something that we can note from the distributor, which is why we believe they might have a more upstream perspective. We conclude that the background and personality of the life cycle coordinators effect the performed environmental coordination.

We see a difference between coordination in product chains and internally within companies, which we conclude from the empirical findings and the state of knowledge. Regarding internal communication the respondents state the importance of sustainability strategies with clear directions and mention this as significant for the coordination of environmental management. But regarding coordination of product chains they do not mention any common overall strategy, only the importance of a supply chain management approach. From this we establish there is a difference between internal and external coordination. However, we do not

know the extent of this difference and we cannot explicitly establish what factors that determine the divergence.

In this study we found that the function of environmental departments increasingly are spread throughout companies various departments and there is less tendency for environmental specialist centers. The empirical findings also show that the life cycle coordinators consider their work as a success when environmental progress takes place without their involvement. These findings suggest that broad knowledge of the environmental field and business knowledge will be demanded for those working at different departments with the coordination of environmental work. These finding indicate that there is an approach supporting generalists rather than entrepreneurs. Findings that are in contradiction to what is stressed in the state of knowledge, where a green entrepreneur is emphasized.

8. DISCUSSION

From this study we discover several interesting questions as well as possible future directions. We see indications of an increasing search for environmental generalists with broad knowledge of the environmental field as well as the entire product chain instead of specialists with specific competences in few subject areas. If the industry more and more search for environmental generalists, in combination with how the life cycle coordinators consider that they have achieved success when environmental progress is taking place without their involvement, we think could lead to an outcome where environmental specialists might work themselves out of a job. Further studies needs to be done to assess what impact this have on the coordination of environmental management in product chains as well as how coordination actually works.

It is interesting that the majority of the interviewees stated that their jobs contain difficulties but that these difficulties also are why they find their work tasks fun. Some of the interviewed find it important to emphasize that the environmental departments work is not more complex than other areas and that other departments face the same difficulties as they do. Especially since other interviewees point out their constant struggle to make progress. Further work needs to be done to establish why this contradiction occurs. Additional research might find it to be an expression of their need to be seen as strong and to maintain an external façade to hide the fact that they have to fight their way internally. The other hand it can be found that it is an expression of self-confidence. Further research might provide insight into this unclear contradiction.

Self-confidence might create a risk of not understanding the importance of learning and progressing, if considering having a full understanding the life cycle coordinators might end up in a success trap. Another question we encountered for further investigation is what the consequences are if the life cycle coordinators would get stuck in this success trap. It would be interesting to study the problems arising if this takes place and how it can be avoided.

Present literature about life cycle coordinators and environmental management in product chains is negligible and almost non-existent. Our research has contributed with additional material and knowledge, but environmental management in product chains is a fragmented field of knowledge and there are a lot of areas where future research is needed.

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APPENDIX A

APPENDIX A Interview guide

- Describe yourself, your title and your work description.
- Describe how you came to work at this company and at this position.
- Describe how you view your role regarding your ability to influence environmental management in product chains.
- Explain what you perceive as important to achieve a functional coordination of environmental management in product chains.
- Explain how you work to coordinate environmental management in product chains.
- Are there any other persons or departments etcetera that are important in this work (internally and externally), and why.
- Explain how you cooperate with these persons or departments and why.
- Describe what you consider important, difficult, motivating etcetera when working with coordination of environmental management in product chains.
- Describe what you would like to have more time or resources for and learn more about.
- Do you feel that you receive attention for the issues you want?
- Do you experience a need to complement your education, and in that case, regarding what subject.
- Describe how this would facilitate your work and how this would improve your personal skills.
- Describe if your colleagues have a similar or different education compared to yours.
- Describe the advantages or disadvantages that similar or different backgrounds between colleagues can mean.