

Declaration

Name of candidate: Jens Elting

This Thesis/Dissertation/Research Project entitled **Green Supply Chain Management in manufacturing companies in New Zealand: A Comparative Case Study Analysis** is submitted in partial fulfilment for the requirements for the Unitec degree of **Master of Business**

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Candidate Signature:Date:

Student number: 1329975

Green Supply Chain Management in Manufacturing Companies in New
Zealand: A Comparative Case Study Analysis

Jens Elting
ID: 1329975

A thesis submitted in partial fulfilment of the requirements for the degree of
Master of Business

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ABSTRACT

Green Supply Chain Management in Manufacturing Companies in New Zealand: A Comparative Case Study Analysis

This thesis examines the factors which a company must consider when implementing Green Supply Chain Management (GSCM) practices. Three companies from the New Zealand “Food and Beverage” (F&B) sector are examined in their approach to be more sustainable. The research method employed is comparative case study analysis. Semi-structured interviews are held with two relevant managers from each company. A theoretical framework is derived from the literature to guide the research. The categories of this framework correspond with the research sub-question and include: Strategic and operational planning; Management structure, systems, and decision making; Management of people and company culture; Relationships with supply chain members. Due to the case-by-case management in two of the examined organizations, the initial aim to compare different systematic approaches was impeded. Nevertheless some similarities and important factors were identified.

Despite being in the same industry, each company is in a different situation influencing its strategic approach to GSCM. One finding is the importance of including an environmental strategy into the overall company strategy and deriving from this consistent goals and objectives and eventually concrete operational instructions. Top-management support is crucial for effectively working GSCM practices. A flat hierarchical structure might be helpful for successful GSCM, but therefore the inherent advantages of a flat hierarchy have to be exploited. Employee involvement is recognised as another crucial element of GSCM. An environmentally friendly company culture is beneficial and should be derived from the companies’ environmental vision and/or mission. Collaborations with suppliers are perceived to be productive and essential to develop innovative products. Other tools, like supplier questionnaires, can help to improve the environmental impact of the whole supply chain.

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CHAPTER 1

1.0 Introduction

Many businesses around the world have exploited the environment with impunity, without any thought of sustainability. In absence of regulations, companies tend to create products and services based in part on the (free) cost of the public goods, namely the environment. Air and water are polluted and forests are degraded. So far, there are no effective tools to include these additional real costs of a product into its end-price. Some approaches exist, for instance the European Union carbon emission trading scheme to include the price of carbon emissions in product costs, but the effectiveness of this strategy is highly controversial (Bond, 2008; Carlen, 2003).

More and more entrepreneurs and managers are motivated to behave in accordance with their personal or social codes of ethics and want to protect the environment for coming generations (Reinhardt, 1998). Another driver is the higher awareness of environmental problems from the consumer perspective, which leads to more demand for companies to balance business performance with environmental issues (Basu & Wright, 2008). Still other companies see an opportunity in these developments and want to build a business that generates a competitive business advantage. (Geyer & Jackson, 2004; Mahler, 2007; Markley & Davis, 2007; Piplani, Pujawan, & Ray, 2008; Rao, 2007; Rezaee & Elam, 2000; Sarkis, 2003; *Suppliers' perspectives on greening the supply chain*, 2001; Zhu, Sarkis, & Lai, 2008). By responding to consumer demand and adhering to their own moral codes, they can force governments to enact better environmental regulations and can compel competitors to improve their efficiency (Geyer & Jackson, 2004; Lee & Rhee, 2007; Vachon & Klassen, 2006; Zhu & Sarkis, 2007).

Green Supply Chain Management (GSCM) is the term that refers to the way in which organizational innovations and policies in supply chain management respond to the need for a more sustainable environment (Srivastava, 2007). GSCM aims to find ways to improve some of the impacts that a company has on the environment. As important as these changes may be for the environment, they are often accompanied by cost savings, improved efficiency, and/or profitable customer awareness (Jackson & Clift, 1998; Rao, 2007; Srivastava, 2007). Some

companies show commitment to GSCM practices on their websites and might even change their mission statements or something similar, but often this means nothing more than “greenwashing” (misinformation that presents an environmentally responsible public image) and not a real commitment (Davies & Hochman, 2007). The objectives of GSCM are aimed at finding a win-win strategy to benefit the environment as well as the performance of the company. These companies want both to exceed the expectation of the regulators and to satisfy the increasing demands of the customer. These companies strive to go further from compliance to competitiveness (Pun, Hui, Lau, Law, & Lewis, 2002).

The New Zealand Business Council for Sustainable Development (NZBCSD) ("Implementing a Sustainable Supply Chain," 2004) gives a guide with several steps to implement GSCM, which focuses on procurement practices, internal operations and product development. However, managers are not always successful in introducing new practices and strategies, and the desired effects do not always take place (Heymans, 2002). A few companies in New Zealand already state they have introduced green or sustainable supply chain management and the NZBCSD is trying to push this development ("Implementing a Sustainable Supply Chain," 2004). GSCM may well become a future goal for many companies in New Zealand and they need to know which factors they have to consider for implementing that strategy. Companies who want to introduce GSCM need to take into account employees, producers, distributors, consumers and recyclers as well as the regulatory frameworks (Bala, Munoz, Rieradevall, & Ysern, 2008). The problem is that the implementation of GSCM practices is complicated and is likely to fail if not executed properly.

Research on GSCM is still in its infancy and needs further elaboration (Zhu, et al., 2008). This paper explores the factors that are important for an effectively working GSCM approach in manufacturing companies. Six participants from three New Zealand based “Food and Beverage” (or F&B) companies are interviewed to examine their green approaches and check against a framework derived from the reviewed literature. The present research has two innovations. It focuses on the underdeveloped area of Green Supply Chain Management in the first instance. But it also adds to the global comparative literature. As Srivastava (2007) notes, most previous research has examined Europe and North-America. This project with its green focus and its New Zealand context seems to have dual relevance.

After further clarification and establishment of the research question and the specific goals and objectives, this thesis examines the relevant literature. The review seeks to discern from the literature any available frameworks that might serve as a framework for the present analysis. The following section about the research design elucidates the methodology and research methods of the paper in detail, as well as pinpoints some limitations. The key results are then presented in light of the above mentioned framework. The discussion section tries to answer the research questions with the help of the framework. The paper ends with the conclusion, including recommendations about further research.

1.1 Research question and sub-questions

A company needs to know which factors to consider when implementing a workable GSCM approach. This includes the critical success factors that make the implementation of these practices operable and effective (Zhu & Sarkis, 2007).

Hence the research question is:

- What operational factors within a company's control are considered to be most important for Green Supply Chain management in Food and Beverage companies in New Zealand?

Sub-questions used to amplify the intent of this enquiry are:

- What is the reciprocal effect of strategic and operational planning on environmental efforts?
- How are the decisions concerning green practices being made? What systems exist?
- How important is the buy-in of all employees and the creation of a green company culture for the success of a green strategy?
- Which types of supply-chain relationships are critical for companies to achieve their green targets?

1.2 Specification of research aim and objectives

The initial work of the present research seeks to identify a framework of factors that are important for implementing a GSCM strategy in New Zealand F&B companies. The targeted framework must be broad enough to fit several types of organizational structures but not to be too broad to be useless for eventual application of the findings (Grant, 2005). The aim of this research is to obtain findings that can be generalized and applied beyond the situation in which the study is initially carried out (Kim, 2003), e.g. in other F&B companies.

Hunger & Wheelen (2002) propose that every strategy implementation must consider who the people are who will carry out the implementation; what must be done; and how are they going to do what is needed? Due to the fact that the employees are the key for each strategic change, the role of the employees is of special interest (de Saá-Pérez & García-Falcón, 2002). For example, do employees need special incentives to buy in to GSCM?

Further objectives are:

- To describe the core characteristics of a working GSCM approach;
- To find out to what extent top management must be part of the implementation process;
- To identify barriers the chosen New Zealand F&B companies had to overcome;
- To determine what compels these companies to opt for green practices;
- To identify decision-making patterns that can be generalized elsewhere;
- To describe how the companies ensure that their decisions are executed at the operational or shop floor level;
- To find out if GSCM really is a benefit for New Zealand's companies;
- To determine the manager's willing to continue down this road and where their next challenges lie.

1.3 Food and beverage industry in New Zealand

The global food and beverage market was worth US\$5.7 trillion in 2008. F&B plays a huge role in New Zealand. The F&B industry is the largest manufacturing sector in New Zealand and contributes heavily to the country's exports, with approximately NZ\$23 Billion in 2008. Overall the industry represents over 10 percent of the country's Gross Domestic Product (GDP). New Zealand Trade and Exchange (NZTE) splits the F&B industry into several categories: Dairy; Meat; Seafood; Fruit and Vegetables; Wine; Speciality food industries. The dairy industry is New Zealand's biggest exporter with approximately 22 percent of total exports. Meat is the second largest food export product, with approximately 12 percent of total exports. Furthermore, New Zealand is the world's largest exporter of sheep meat. The seafood industry benefits from the fourth largest coastal fishing zone in the world, and produces one billion meals annually. The fruit and vegetables industry is advantaged through New Zealand's geographic isolation, and its stringent bio-security regulations. This keeps New Zealand free from the major pests and diseases elsewhere prevalent in the world. The wine industry developed from small family-based businesses to a technologically advanced industry today, and is growing fast. The speciality food industry encompasses a variety of food and beverage manufacturers with approximately 2000 companies ("Food and beverage," 2009).

CHAPTER 2

2.0 Literature Background

Previous researchers have approached GSCM from diverse disciplinary and theoretically different angles. These include such diverse areas as (re-)engineering, management, logistics, network analysis, human resources, and GSCM measurement (Sarkis, 2003). These approaches have a different view on the field of GSCM and therefore define it in different ways.

In order to implement GSCM practices successfully, a company needs to know exactly what GSCM is. Thus, the literature review starts with a GSCM framework deduced from the vast literature. Then it reviews why it is important for companies to introduce GSCM, followed by a description of current GSCM practices and what the barriers for an implementation of GSCM are. The main part of the literature review contributes to an understanding of the factors that make GSCM work effectively.

2.1 Framework defining GSCM

Extent of literature

The literature has not been able to unify around a generally accepted definition of GSCM or even of its scope (Srivastava, 2007; Vachon, 2007). Zhu, Sarkis & Lai (2008) state that the scope of GSCM depends on the goals of the researcher and the given problems. Some researchers focus just on the procurement stage, whereas others investigate the complete logistics channel.

What is worse, the term GSCM is frequently used interchangeably with the term “environmental supply chain management” (ESCM) (Handfield, Sroufe, & Walton, 2005; Kogg, 2003), which merely considers how supply chain management may be considered in the context of the environment. An alternative term “sustainable supply chain management” expands the field properly to social and ethical issues as well (“Implementing a Sustainable Supply Chain,” 2004; Mahler, 2007; Markley & Davis, 2007; Piplani, et al., 2008). These latter

efforts are termed “Triple Bottom Line”-approaches, and they indicate the attempt to deliver economic, social, and environmental benefits simultaneously (Markley & Davis, 2007) In its broadest sense, Triple Bottom Line captures the spectrum of values that organizations must embrace to stay in business as these issues are becoming increasingly important (Elkington, 1997; Elkington, 1994). However, this paper will not focus on social issues.

GSCM fits into what Jackson & Clift (1998) call Industrial Ecology and they define the goal of GSCM as the attempt to mimic the natural eco-system to establish sustainable industrial systems. However there is an almost irresolvable tension in industrial ecology. Profit, the underlying motive in industrial ecology, pushes on the one hand towards improved production efficiency, and on the other hand towards increased production output. That means that a higher output outweighs measures taken against pollution to make the product cheaper, according to the market mechanism of supply and demand.

Related to GSCM is Environmentally Conscious Manufacturing (ECM). It “involves developing and implementing manufacturing processes that minimize or eliminate waste, reduce energy consumption, improve materials utilization efficiency, and improve operational safety” (Lin, Jones, & Hsieh, 2001, p. 71). So, GSCM is not merely a detached approach in one part of a company, but requires concerted efforts throughout the company and is more than simply putting some green practices in place, but a consistent, holistic improvement of the environmental performance on all levels of management and shop-floor (Davies & Hochman, 2007).

Another cited approach in the literature is the so-called “Industrial Metabolism” (Frederick & Kuratko, 2009). This view takes the word ‘industry’ to mean a ‘balanced, quasi-stable collection of interdependent firms belonging to the same economy’. The word ‘metabolism’ usually refers to the internal processes of a living organism that are necessary for the maintenance of life. Using a biological analogy, Industrial Metabolism (IM) was first proposed by Robert Ayres as ‘the whole integrated collection of physical processes that convert raw materials and energy, plus labour, into finished products and wastes’. Just like a living organism, industrial metabolism deals with the integration of physical processes that convert raw material, energy, and labour into finished products and wastes. Labour input and consumer output act as the human components. Both industrial metabolism and ecological metabolism are

examples of dissipative systems, which are self-stabilising in a stable state. A manufacturing enterprise or firm may also be described as a self-organising entity, and the concept of industrial metabolism again applies. IM focuses on developing networks of industries that create eco-efficiencies and are eco-interdependent. They create a permanent waste exchange system where the by-product of one company becomes the raw material for another (Frederick & Kuratko, 2009).

One novel approach is seen in the book *Cradle to Cradle* by William McDonough and Michael Braungart (2002). The authors envision a world without waste, a world without poisons, and a world in which all materials are continuously recycled. It already exists. We call it nature. In the natural system there is no waste and the same materials have been recycled for billions of years. The new industrial revolution is all about absorbing the lessons we should have learned from nature long ago. The key to sustainability is making the market work for the environment instead of against it (Webster, 2007). The industrial application of cradle-to-cradle design creates a cycle for industrial materials. Like the Earth's nutrient cycles, the flow of materials eliminates the concept of waste (cradle-to-cradle, rather than cradle-to-grave). Each material in a product is designed to be safe and effective, as well as to provide quality resources for subsequent generations of products; in other words, materials are conceived as nutrients and designed to circulate safely and productively.

Yet another approach examines "lean manufacturing". This framework asserts that the expenditure of resources for any goal other than the creation of value for the end customer is wasteful and should be eliminated. Lean manufacturing is a philosophy generally associated with the Toyota Production System (TPS). It is renowned for its focus on reducing the original Toyota seven wastes in order to improve overall customer value (Smalley & Harada, 2009; Sutherland & Bob, 2008).

Still other authors focus just on specific elements of GSCM:

- Hervani, Helms & Sarkis (2005) define GSCM simply as the addition of green purchasing, green manufacturing/materials management, green distribution/marketing and reverse logistics.

- Vachon & Klassen (2006) focus on the transactional issues in GSCM and state that GSCM involves at least two or more transacting organizations.
- Heiskanen (2002) reports extensively about Life Cycle Assessment (LCA), an approach which considers every kind of resource and pollution used from raw material to waste in a products' life.
- Some research just focuses on end-of-life processes (Geyer & Jackson, 2004; Thierry, Salomon, van Nunen, & van Wassenhove, 1995).

The New Zealand Business Council for Sustainable Development puts forward that the most benefits are made when the focus is as far as possible in both directions of the supply chain, i.e. from raw material to end-product and waste management ("Implementing a Sustainable Supply Chain," 2004).

Vachon (2007) brings in the concepts of externalizing and internalizing which originally came from the transaction cost theory. In the environmental context it means when companies conduct environmental procedures through markets they externalize their environmental commitment by employing market-based mechanisms. There is no significant commitment of the organization's own resources. Companies internalize environmental procedures through incorporation of those activities within their organizational boundaries or even within their supply chain. In other words, internalizing is process focused and externalizing is outcome focused. Vachon & Klassen (2006) suggest that "internalizing processes" should be labelled "environmental collaboration", and that "externalizing processes" should be termed "environmental monitoring". This categorization helps to define green practices on the simplest level, since an organization can choose to get directly involved (e.g. through joint planning sessions, knowledge sharing, etc.), or using market mechanisms to influence other companies.

In the end, the present researcher must select from these approaches to form a framework for analysis. Most relevant to the present study are the actual practices of companies that apply GSCM. These practices vary in each company, and the possibilities to apply GSCM efficiently are different. Included in this are the underlying management processes and impacts of the introduction and application of GSCM on strategy, human resources, and decision making.

Finally there are the relationships with stakeholders, especially suppliers that are of importance for the development of green practices.

Typology

To help make this selection, a typology of definitions of GSCM is proposed. Given the scope of this research, these characterising concepts describe the dimensions for the framework defining GSCM. Table 1 aims to synthesise the literature and to create a typology focusing on practices, processes, and relationships with the concepts of internalizing and externalizing together with some definitions into an overview of the relevant literature and their focus on GSCM. The first column is concerned with the actual material flow and the other two columns deal with information flow issues. The information flow side is again divided into applicable management processes, and the last column is focusing on relationships with stakeholders.

Synthesis

Seuring (2001) proposes a definition of GSCM by adding ‘environmental intentions’ to the classic definition of supply chain management. This involves not only the material flow but also the associated information flow up and down the supply chain: “The supply chain encompasses all activities associated with the flow and transformation of goods from raw materials stage (extraction) through to the end user, as well as the associated information flows.” (p.73). However this definition is tailored to fit the classic definition of supply chain management and therefore is not suitable for the purpose of the paper.

The most suitable definition is Kogg’s (2003): GSCM is “the set of supply chain management policies held, actions taken and relationships formed in response to concerns related to the natural environment with regard to the design, acquisition, production, distribution, use, re-use and disposal of the firm's goods and services.” (p.54). It embraces all relevant issues as visualized in Table 1, and is therefore the basis of this research.

Table 1: Typology of GSCM definitions

	Literature/definitions focusing on		
	material flow	information flow	
	Practices	Processes (management processes)	Relationships
Definitions	GSCM is "the set of supply chain management policies held, actions taken and relationships formed in response to concerns related to the natural environment with regard to the design, acquisition, production, distribution, use, re-use and disposal of the firm's goods and services." (Kogg, 2003, p.54)		
	- GSCM is: "integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life" (Srivastava, 2007, p.54)	- ESCM: "The formal system that integrates strategic, functional and operational procedures and processes for employee training and for monitoring, summarizing and reporting environmental supply chain management information to stakeholders of the firm. The documentation of this environmental information is primarily focused on supplier performance, audits, design, waste minimization, training, reporting to top management and goal setting." (Handfield et al., 2005, p.7)	
	- GSCM "ranges from green purchasing (GP) to integrated life-cycle management supply chains flowing from supplier, through to manufacturer, customer, and closing the loop with reverse logistics" (Zhu et al., 2008, p.262)		- Range of GSCM: "Effective sustainable development must extend from an individual company both up and down the supply chain." (Implementing a Sustainable Supply Chain, 2004, p.1)
	- GSCM are the concerted efforts throughout the company and is more than simply putting some green practices in place, but a consistent, holistic improvement of the environmental performance on all levels of management and shop-floor (Davies & Hochman, 2007).		
Internalizing	- Packaging take-back system (Matthews, 2004)	- environmental cost accounting (Reiskin et al., 2000)	- collaboration with suppliers (Trowbridge, 2001)
	- Product recovery management (Thierry et al., 1995)	- linkage of environmental performance to executive compensation (Cordeiro & Sarkis, 2007)	- moderating effects on GSCM through market-, regulatory-, and competitive-pressures (Zhu and Sarkis, 2007)
	- reducing packaging waste; recycling; LCA; Influence on legislation (Trowbridge, 2001)	- environmental performance metrics (Trowbridge, 2001)	- Dispersion of green ideas across organizational boundaries (Stenberg, 2007)
	- supply loops (industrial ecology) "end-of-life products replace primary resources in forward supply chains" (Geyer and Jackson, 2004)	- simulation of logistic channels and plant locations (Khoo et al., 2001)	- importance of trust for interorganizational knowledge sharing in green supply chains (Cheng et al., 2008)
	- GSCM is about reducing waste and pollution. It also considers the classic functions of the supply chain management: minimizing costs, efficient logistics, timely delivery of goods (Khoo et al., 2001)	- integration of environmental costs into consideration of companies (Seuring, 2001)	- influence of organizational culture and human resources on environmental performance (Angel del Brio, 2008)
	- Integrated chain management (ICM): environmental implications of supply chain dynamics from a life cycle perspective (Bala et al., 2008)	- strategic decision framework to evaluate green supply chain alternatives (Sarkis, 2003)	- effect of environmental collaboration/monitoring of supplier and customer on investment decisions (Vachon, 2007)
	- elements of GSCM are procurement, production processes, distribution and transportation, reverse logistics, packaging (Sarkis, 2003)	- performance measurement of GSCM (Hervani et al., 2005)	- focusing on core-competencies and increasing outsourcing relocates responsibilities for design and engineering to supplier (Handfield et al., 2005)
	- mentioning product design, process design, manufacturing processes, and purchasing (Handfield et al., 2005)	- strategic decision framework to evaluate green supply chain alternatives for purchasing decisions (Handfield et al., 2005)	- LCA and its effect on responsibility in fragmented markets (Heiskanen, 2002)
	- redesign, substitute, reduce, recycle, remanufacture, extension of product's life cycle, support of green suppliers, life cycle assessment (Handfield et al., 2005)	- GSCM practices implementation measurement scale (Zhu et al., 2008)	- bringing stakeholders, shareholders, employees into line for environmental goal attainment (Davies & Hochmann, 2007)
	- procedures, where companies can introduce green practices include purchasing, in-bound logistics, production, distribution, out-bound logistics, reverse logistics (Rao, 2007)	- presentation of steps to implement GSCM (Implementing a Sustainable Supply Chain, 2004)	
Externalizing	- environmental product differentiation (Reinhardt, 1998)	- supplier assessment questionnaires at AMD (Trowbridge, 2001)	- suppliers have to adapt to the green aspirations of their competitors (Robinson and Wilcox, 2008)
			- shift from production based industry to service-industry leads to more environmental responsibilities for the supplier (Reiskin et al., 2000)
			- supply chain environmental management: the perspective of the suppliers on green practices (Suppliers' perspectives on greening the supply chain, 2001)
			- construction of a green supply chain in the cotton-textile sector (Kogg, 2003)
			- drivers for the participation of suppliers in green supply chain initiatives (Lee, 2008)

2.2 Importance of GSCM

Looked at in this way, the literature gives extensive reasons why GSCM will become increasingly important for more and more companies in the future. The list of stakeholders interested in environmental strategies ranges from customers, competitors, potential investors, employees, neighbours, environmental legislation, and non-governmental organizations (NGOs) (Basu & Wright, 2008; Geyer & Jackson, 2004; Reiskin, White, Johnson, & Votta, 1999; Vachon & Klassen, 2006).

As an example of stakeholder pressure, Robinson & Wilcox (2008) see the biggest impact coming from big, internationally operating companies. After surveying some of the biggest companies worldwide, they found that more than 90% of these companies are considering demanding environmental sustainable practices from their suppliers in future. More than 50% stated that they have already implemented some form of green-minded supplier qualification. These companies expect that their suppliers start to think green and act accordingly.

The research of Reiskin, White, Johnson & Votta (1999) supports these findings. They see a shift from production-focused to service-focused industries, which is accompanied by outsourcing. Instead of delivering quantity, suppliers are expected to deliver quality and solutions for problems which benefit the environment. Thus, suppliers have to deal with environmental issues of their customers in a more sustainable way. This in turn leads to different prerequisites for the relationship between supplier and customer. The conventional relationship sees conflicting interests. The supplier wants to increase his volume sold (e.g. chemicals), whereas the customer wants to decrease this volume and his costs. In the service-focused industry, both customer and supplier want to increase the value and efficiency of the service (e.g. fewer chemicals, higher output).

Trowbridge (2001) discerns between internal and external drivers for the implementation of GSCM at chip manufacturer Advanced Micro Systems (AMD). Internal drivers are the willingness to improve risk management due to potential interruptions in the supply chain, and the collaboration with suppliers to find alternative materials and equipment to minimise environmental impacts.

External drivers are mainly customer requests, investors and non-governmental organizations (NGOs) (Trowbridge, 2001). More and more customers are trying to get information about the environmental impact of products and make their buying decision dependent on that. NGOs like Greenpeace or World Wide Fund for Nature (WWF) expose companies harming the environment and through that affect customer behaviour.

It is frequently mentioned that saving resources and energy cuts down costs (Jackson & Clift, 1998; Rao, 2007; Srivastava, 2007). Profitable pollution prevention is an inherent mechanism in making production processes more efficient (e.g. the amount of energy needed to produce iron and steel has fallen continually since the Industrial Revolution) (Jackson & Clift, 1998).

Thus the need for the implementation of green practices has many reasons, but the aspiration of a sustainable competitive advantage is for many authors the decisive reason for GSCM (Geyer & Jackson, 2004; Mahler, 2007; Markley & Davis, 2007; Piplani, et al., 2008; Rao, 2007; Rezaee & Elam, 2000; Sarkis, 2003; *Suppliers' perspectives on greening the supply chain*, 2001; Zhu, et al., 2008). The facing of environmental issues is not just a precondition for long-term survival but also for long-term profitability (Khoo, Bainbridge, Spedding, & Taplin, 2001). Nonetheless, one motivation is *not widely accepted* in the literature, namely automatic superior economic advantages coming with environmental practices. Some research questions the guaranteed generation of win-win situations through GSCM practices (Reinhardt, 1998; Zhu & Sarkis, 2007).

Regulatory pressure is increasing continuously. Reinhardt (1998) observes that ultimately environmental quality needs governmental regulation, as the environment is a public good. According to him, people and especially companies will not spend any more on environmental issues than is required to achieve their own maximising economic goals, as these investments would not benefit themselves in total. So the need for green practices is often not just out of own choice, but compulsory by law.

Several researchers have different points of view about the advantages of the implementation of GSCM:

- A report for the Business for Social Responsibility Education Fund (*Suppliers' perspectives on greening the supply chain*, 2001) enumerates cost reductions, greater

operational efficiencies, enhanced value to customers, increased sales, positive media attention, and positive ratings from investment firms as benefits of the implementation of GSCM.

- Seuring (2001) sees the improved relationships between the supply chain members as a source of competitive advantage.
- Thierry, Salomon, van Nunen & van Wassenhove (1995) mention that greener products help to get and retain environmentally conscious customers and employees. Furthermore future liabilities can be lowered, as well as insurance rates and disposal costs. Even future legislation could be influenced through lobbying, and pro-active companies would gain an advantage.
- Rao (2007) sees other main motivators in the Philippine context. Here the customer pressure and the desire to avoid potential export limitations come first. Customer pressure is based on the customer demands in developed countries, who want more green products. Therefore the whole supplier base needs to conform to these world-class standards, especially to the ISO 14000.

More motivators for greening the supply chains are reducing the risk of environmental hazards, fear of bad publicity, cost of non-compliance, governmental penalties and just to demonstrate an image as an environmentally responsible company. Thus, eventually globalization can be identified as a main driver for the development of GSCM. As most products are made by more than one company, there needs to be an alignment of decisions and strategies to use scarce resources effectively (Piplani, et al., 2008).

2.3 Existing GSCM practices

Sarkis (2003) enumerates four basic environmentally conscious end-of-life practices: reuse, remanufacture, recycle, and disposal alternatives. A fifth practice is reduction, not just applicable as an end-of-life strategy, but especially important during manufacturing and distribution. Reuse, remanufacture, and recycling are similar and vary just in the degree of reuse of the material. Reuse is characterised by little impact on the physical structure of the material,

remanufacture practices use just parts of the original material and components are substituted. Recycling can change the physical structure completely.

Handfield et al. (2005) add a few strategies for environmental impact reduction: green design, substitution, extension of products' life cycle through material selection, support of suppliers, and life cycle assessment (LCA). Green design considers the product level and the manufacturing level. On the product level this means environmentally friendly materials are used, but, also, already considers the manufacturing process of the product. Thus aiming for less use of energy, water and so forth. Substitution is inherent in green design and means the omission of hazardous materials in favour of environmental friendly materials. Extension of a product's life cycle is again connected to green design. A product is designed in advance, in a way that the whole product is not obsolete at the end of the life cycle, and that parts can be reused in the new product. The support of suppliers encompasses all procedures helping suppliers to work in a sustainable way including improving their manufacturing processes, clear instructions for a green product, or cross-organizational teams. LCA addresses the environmental burden of a product, not only at product composition, or at the processing stage, but at the whole physical life cycle of a product from the extraction of raw materials to end-of-life (Heiskanen, 2002). Thus, LCA confronts market actors with new responsibilities. A producer is not just responsible for the environmental damage in the own production processes, but must consider the environmental pollution from other stages as well.

The four phases of product life cycle have an important influence on the decision about environmental practices. The introduction phase is focused on investment in product research and development, in the growth phase increasing production capacities and logistic channels are of importance, the maturity phase is characterised by the implementation of process and cost efficiencies, and in the decline phase products divestments are necessary (Sarkis, 2003).

All practices mentioned up to now have resulted from greening the operational life cycle which include inbound logistics, production or internal supply chain, outbound logistics, and possible reverse logistics (Rao, 2007). Sarkis (2003) proposes a slightly more detailed segmentation as stages in the supply chain: Procurement decisions; Production processes; Distribution and transportation, Reverse logistics operations and packaging. Procurement decisions influence the environmental efforts through purchasing green products and exerting influence on the

suppliers. Production processes can have numerous impacts on the environmental performance of a company, for example the ability to integrate reusable or remanufactured components into the system, or design of the processes to prevent waste and pollution. Some decisions in distribution and transportation include the locations of outlets, mode of transportation, or just-in-time practices. Reverse logistics operations are assigned to return recyclable or reusable materials and consists of several stages as well, including collection, separation, densification, transitional processing, delivery and integration (Sarkis, 2003).

Geyer & Jackson (2004) focus their work on supply loops, which are end-of-life strategies. This includes diverting end-of-life products from dumping to collecting them for recycling. These secondary resources substitute primary resources in the supply chain. Packaging is mostly interlinked with the other components of the organisational life cycle, and is focused on a minimization of waste and its impact on the environment (Sarkis, 2003). In particular improvements in the area of packaging and transportation promise savings and improvements in the environmental performance simultaneously (Matthews, 2004).

Table 2 gives an overview of possible basic green-practices (Handfield, et al., 2005; Heiskanen, 2002; Matthews, 2004; Sarkis, 2003; Zhu, et al., 2008).

Table 2: Basic green-practices

<p>Green purchasing</p> <ul style="list-style-type: none"> - eco labelling of products - cooperation with suppliers for environmental objectives - environmental audit for suppliers' internal management - suppliers' ISO 14000 certification - second-tier supplier environmentally friendly practice evaluation 	<p>Cooperation with suppliers</p> <ul style="list-style-type: none"> - for eco/green design - for cleaner production - for green packaging - for more effective ways of transportation
<p>Eco-design with the help of LCA</p> <ul style="list-style-type: none"> - for reduced consumption of material/energy during manufacturing - for reuse, recycle, recovery of material, component parts or other goods - to avoid or reduce use of hazardous products and/or their manufacturing process 	<p>End-of-life strategies</p> <ul style="list-style-type: none"> - Components or materials of a product go back in to the supply chain through reuse, recycling or remanufacturing, or are composted. - Extension of product's life cycle.

Robinson & Wilcox (2008) give an overview of the points at which companies can begin to think about greening their business. They enumerate production planning, manufacturing, distribution green design, packaging, recycled content, warehousing, green energy, IT, server farms, ridesharing/telecommuting, estates, and green procurement as possible starting points for companies. This list has no claim of being complete. For a start, most companies prefer an easy entry into green practices. Zhu & Sarkis (2007) found that some GSCM practices require less effort and resources than others. An example is green purchasing which is supposed to be less difficult than eco-design. In the simplest case a company just buys a new, more environmental friendly product component or packaging, instead of the old, more environmentally unfriendly ones.

For the implementation of green practices it is important to note that GSCM practices are interrelated (Zhu, et al., 2008). The implementation of one practice may have a positive or negative effect on the performance of another green project. Furthermore Zhu et al. (2008) suggest that implementation of GSCM practices should be multifaceted, and not limited to one specific practice. This is because a multiple approach is found to be more beneficial in terms of an improved environmental image and possible economic benefits. In addition to that a multiple approach is more encouraging for the staff, because they realise that the environmental commitment is not just limited to one issue. This helps to identify themselves with the company and its goals.

2.4 Barriers to the implementation of GSCM

Kogg (2003) avers that the lack of clout is one of the main excuses why companies do not implement GSCM practices. Small companies in particular state that their power to change their suppliers' mindset towards more sustainable manufacturing methods is limited. Some proposed strategies to motivate other companies to participate in GSCM practices are: Finding someone else of the same size to work with to equal the power balance; Paying premiums to encourage collaboration; Facilitation of the changes the suppliers have to make, by helping through provision of expertise and training; Selection of the right partners in terms of a trustful relationship, and promise of mutual growth.

Hervani et al. (2005) argue that small and medium sized companies have a range of factors preventing them from implementing GSCM practices: limited financial resources, the organization's management structure, lack of knowledge and training of managers and employees due to short-term orientation, the low status of environmental concerns in the company, limited capability to secure needed environmental innovations, as well as lack of relationships with stakeholders. However these limiting issues are also evident in some larger organizations (Hervani, et al., 2005).

The lack of financial resources is a particular concern for companies. Robinson & Wilcox (2008) found that some companies see the impact of environmental issues more as a risk of rising costs. Nearly 50% of their polled companies see the risk of rising costs as a result of a higher environmental commitment. Nevertheless, the other half sees this as an opportunity for cost savings.

Another drawback found in the case study of Kogg (2003) is that the examined company became more dependent on fewer suppliers, because there were not many distributors of green products. So this dependency is a discouraging feature for other companies who want to implement GSCM. However this factor might lose its validity in the future when an increasing number of companies go green and offer more sustainable products.

Handfield et al. (2005) state that some environmental issues, e.g. the 'low-hanging fruit', are mostly easily captured. After these first steps, top management has to go beyond just agreeing to green practices, but really support such processes on all levels. On the operational level particularly, managers need to know what to do, e.g. buying traditional products based on cost, quality and lead time objectives, or buying the more expensive environmentally friendly materials. These issues are not easy to address and need a new set of procedures and information. Thierry et al. (1995) found that companies have problems locating appropriate data and information for decisions concerning GSCM. It is said that the information is often not just scattered throughout the company, but throughout all relevant companies in the supply chain, or is even not available at all.

The report for the Business for Social Responsibility Education Fund (*Suppliers' perspectives on greening the supply chain*, 2001) identifies the lack of integration of environmental issues in

their purchasing decisions as a barrier for GSCM. Companies require environmental consciousness from their suppliers but do not incorporate this issue in the purchasing decision and still consider cost, quality, and lead time as the only factors. Other barriers are higher costs of environmentally friendly products, lack of lead time to provide environmental friendly solutions, technological issues, existing procurement specifications, and lack of protection for innovation.

Ángel del Brío, Junquera & Ordiz (2008) see lack of motivation resulting from a poor company culture as one of the most important constraints for companies introducing environmental practices. Similarly, Heymans (2002) states that poor leadership is the reason for an unsuccessful implementation of new strategies and practices. In these companies the will to do some environmental changes may be present in some staff members, but the top-management needs to initiate and support a developing supportive attitude and company culture.

Nathan (2007) considers the impacts the just-in-time method has on the environmental performance of a company. Depending on the design and conditions, a positive or negative impact can result. However in most cases it is a negative impact, because of the lower efficiency due to more empty trips of trucks. This implies that just-in-time approaches actually conflict with the aspiration of companies to become green.

2.5 Factors for an effectively working environmental commitment of a company

Kogg (2003) splits GSCM in three distinct parts. First, the objectives that have to be achieved need to be determined. Then all relevant actors (employees, suppliers, etc.) need to be motivated to ensure that each party has a desire in reaching the objects. Lastly, the achievement of the objective has to be controlled through a system. Wee & Quazi (2005) go on to develop seven critical factors in their research about environmental management: Top management commitment; Total involvement of employees; Training; Green products/process design; Supplier management; Measurement; Information Management. The BSR Education Fund (*Suppliers' perspectives on greening the supply chain*, 2001) defines several attributes for working GSCM: Collaboration with other supply chain members, setting of clear goals, cross-functional teams and electronic supported procurement for data gathering are supposed to be critical for successful GSCM. Lin, Jones & Hsieh (2001) discern three dimensions through

which environmentally conscious business practices can be studied: An analytical dimension considering strategy and decision procedures; A behavioural dimension considering cultural and motivational issues; and an organizational dimension addressing regulations and the supply chain environment.

The scope and range of the literature about managerial and organizational features is enormous. Thus, derived from the above mentioned issues, Table 3 is divided into the following parts: Management structure, systems and decision making; Strategic and operational planning; Management of people and company culture; and relationships with supply-chain members. This framework tries to integrate the segmentation of Kogg (2003), Wee & Quazi (2005), the Business for Social Responsibility Education Fund (*Suppliers' perspectives on greening the supply chain*, 2001), as well as Lin et al.(2001).The present research has decided to adapt the following work on factors for an effectively working GSCM commitment of a company into an analytical framework for the comparative analysis of New Zealand food and beverage companies. The subsequent findings section and discussion of the research results are based on this framework (Table 3).

Table 3: Factors for an effectively working GSCM commitment

Strategic and operational planning	Management structure, systems and decision making	Management of people & company culture	Relationships with supply-chain members
-setting of clear goals (Suppliers' perspectives on greening the supply chain, 2001)	- seven critical factors in their research about environmental management: Total involvement of employees, Training; Green products/process design; Supplier management; Measurement; Information Management. (Wee & Quazi, 2005)		Top management commitment; Supplier management;
- clear goals and objectives consistent with vision and mission (Geyer & Jackson, 2004)	- use of cross-functional teams; electronic supported procurement for data gathering (Suppliers' perspectives on greening the supply chain, 2001)	-importance of organizational learning (Strachan, 2007)	-Collaboration with other supply chain members(Suppliers' perspectives on greening the supply chain, 2001)
- alignment of corporate strategy with environmental strategy (Trowbridge, 2001; Handfield et al., 2005)	- strategy implementation: Backing, assessability, specificity, cultural receptivity (Miller, 1997)	- development of employees' awareness, knowledge, skills, and expertise through organizational learning (Pérez et al., 2007)	- importance of the communication with other stakeholders (Pérez et al., 2007)
- implementing GSCM should be multi-faceted (Zhu et al.,2008)	- executives compensation is linked to environmental performance (Cordeiro & Sarkis, 2007)	- importance of management support & employee participation directed through the organizational culture (Ángel del Brío et al., 2008)	- integration of suppliers & rationalization of the supply chain (Vachon & Klassen, 2006)
- need of instruments to overcome barriers and the development of monitoring tools (Bala et al., 2008)	- environmental strategy implementation: Definition of the item with the highest priority, conduct research about the matter, develop strategy and objectives, implement the strategy, and monitor the process (Handfield et al., 2005)	-employees are the paramount issue. Following factors are of importance: Top management support; Environmental training; Employee empowerment; Teamwork; Rewards system (Daily & Huang, 2001)	- trust contributes to better participation and communication between supply chain members (Cheng et al., 2008)
- consideration of employees, producers, distributors, consumers and recyclers as well as the regulatory frameworks (Bala et al., 2008)	- environmental management standards, the British BS 7750, the EU Eco-Management and Auditing Scheme, and the ISO 14001 (Strachan, 1997)	four factors supporting successful environmental practices through employees: management commitment; employee empowerment, rewards and feedback. (Govindarajulu & Daily ,2004)	- reciprocal learning in companies through benchmarking, business associations, and meetings (Zhu & Sarkis, 2007)
- consider willingness of the customers to pay a surcharge, delivery of credible information about the product, and barriers for competitors to copy the innovation (Reinhardt, 1998)	- costs caused by GSCM practices must be measured and controlled (Seuring, 2001)	- top-management's attitude towards environmental issues is an important factor for the depth and extent a company implements environmental management. (Lee & Rhee, 2006)	Cooperation with other companies in the supply chain increases, and the number of suppliers is likely to decrease (Thierry et al., 1995)
- Interrelation of GSCM practices (Zhu et al., 2008)	- Embedding of measurements into a framework including all levels of management (Hervani et al., 2005)	- importance of environmentally supportive Vision and Mission (Strachan, 2007)	environmental collaboration, through cross-functional teams of customer and supplier (Vachon & Klassen, 2006)
- phases of the supply chain: inbound logistics, production or internal supply chain, outbound logistics, and possible reverse logistics (Rao, 2007)	- flat organizational structures (Strachan, 1997)	- employees understand and support these practices; commitment of the corporate leadership; continual communication of the importance of these efforts and adapt incentive system (Davies & Hochman, 2007)	- environmental monitoring, focused on controlling the suppliers (Vachon & Klassen, 2006)
- exemplary list of possible specific, environmental goals (Handfield et al., 2005)	- Implementation of ISO 14001 standards (Rezaee & Elam, 2000)	- organizational culture is supposed to support the environmental efforts (Govindarajulu & Daily, 2004)	
	- implementation of an environmental management system (EMS) (Pun et al., 2002)	- vision and mission gives direction (Geyer & Jackson)	

2.5.1 Strategic and operational planning

Geyer & Jackson (2004) mention the problematic nature of how to define success in GSCM. They show that the pursuit of economic and environmental performance can build tension, and possibly create Win-Lose situations. Thus it is not trivial to define success in GSCM, as

economic and environmental goals may conflict with one other. After capturing the 'low-hanging fruits' (e.g. recycling cardboard, paper, glass) managers encounter perceived trade-offs. It is easy to define the broad goal of being environmentally friendly, but when it comes down to the functional or operational level managers have to decide if going the green way is actually worth it. Thus clear operational goals and objectives guided through the vision and mission are necessary (Geyer & Jackson, 2004).

In addition to traditional performance measures of cost, quality, delivery and technology, the impact of managerial decisions on the environment must also be considered (Handfield, et al., 2005). As already seen, these specific performance measurements need to be consistent with the general strategic direction, as well as with specific goals and objectives of a company so trade-offs can be encountered and managed appropriately. Several techniques to illustrate the environmental effects in the supply chain already exist, like the life cycle assessment, product stewardship and design for environment.

Handfield et al. (2005) give an exemplary list of possible specific and measurable goals a company can pursue in their environmental efforts (e.g. reduce content of harmful substance to zero in all products within six months, or ensure that all new product packaging materials comply with recycling goals). Hervani et al. (2005) list over forty possible metrics to measure the environmental performance of a company, ranging from air emissions (e.g. fugitive non-point air emissions, stack or point air emissions, etc.), to energy recovery (e.g. fuel use, energy use, etc.), and recycling (on-site and off-site recycling, etc.). It is stressed that all these measurements cannot stand alone but need to be embedded into a framework including all levels of management (i.e. strategic, tactical, and operational). This framework must be derived from the organization's vision and mission for its consistency with the company's strategy.

Trowbridge (2001) gives some examples of performance metrics for GSCM at Advanced Micro Devices (AMD). Three categories of performance metrics are developed: Resource utilisation, releases and transfers, and compliance. Resource utilisation's are, for example, total water used, total water conserved (reduced, re-used, recycled), or fuel used. Specific metrics in the releases and transfers category are for example, corrosive air emissions, regulated hazardous waste generation, other solid waste sent for off-site disposal. The compliance category includes metrics such as citations or notices of violations, reportable spills or releases.

Seuring (2001) approaches the topic of GSCM from a cost perspective. He describes how costs caused by GSCM practices can be measured and controlled to achieve more effective outcomes. Accounting has to consider all occurring costs, not only in the production stage, but during the complete lifecycle (Reiskin, et al., 1999). The difference to LCA is in the consideration of monetary cost contrary to the environmental costs, like the carbon footprint, in LCA.

To get a holistic view of the performance results it would be necessary to measure performance indicators across the supply chain. This inter-organizational approach faces multiple problems including non-standardized data, mistrust, poor technological integration and differences in organisational policy (Hervani, et al., 2005). Thus a close collaborative approach is necessary to obtain optimal results from green practices along the supply chain.

There are different ways to classify the environmental efforts of companies. Srivastava (2007) suggests three GSCM approaches are reactive, proactive and value-seeking. Reactive companies invest minimal resources into their environmental efforts and use focus on end-of-life strategies, especially recycling to lower the environmental impact. Proactive companies preempt regulations by investing a moderate amount of effort. Value-seeking companies integrate environmental efforts as strategic initiatives into their business strategy.

Similar to Srivastava (2007) Lee & Rhee (2007) make out four different environmentally strategic types: reactive; focused; opportunistic; and proactive. The reactive strategy is applied by companies that show a low level of environmental responsiveness. Their concern is the compliance with regulations. Focused companies bundle their efforts in narrow decision areas and have a high level of environmental management. The opportunistic strategy can be identified through environmental concern in all decision areas on a medium level. The proactive strategy is concerned in all environmental decision areas and deploys the latest environmental practices.

Thierry et al. (1995) consider what a working approach for Product Recovery Management (PRM) might require. The design of the product needs to be reconsidered under environmental considerations. Cooperation with other companies in the supply chain increases, and the number of suppliers is likely to decrease. Further changes are required in production, operation and

logistic management. Even existing accounting systems are supposed to be inadequate for PRM purposes.

To launch a green product successfully, Reinhardt (1998) enumerates three points marketing and sales people have to consider with their environmental product differentiation strategy: The willingness of the customers to pay a surcharge, delivery of credible information about the product, and barriers for competitors to copy the innovation. This is not a trivial task for marketing and is accompanied by other issues, especially the maintenance of a competitive advantage through an advanced HR system.

2.5.2 Management structure, systems and decision making

Companies can choose from three environmental management standards: the British BS 7750, the EU Eco-Management and Auditing Scheme, and the ISO 14001 (Strachan, 1997). The most prominent one is the ISO 14000 series, an environmental management standard from the International Organization for Standardisation (ISO), and was introduced in 1995. Research showed ambiguous results on the question if the ISO 14001 certification leads to an improved performance (Khiewnavawongsa & Schmidt, 2008). However effective GSCM-practices or an exemplary environmental performance are not necessarily guaranteed when a company is ISO 14000 accredited (Trowbridge, 2001).

Rezaee & Elam (2000) elaborate on the implementation of ISO 14000 and develop a fourteen-step implementation guide. Their emphasis is on establishing all relevant internal procedures and prerequisites for an ISO 14001 accreditation. They see a number of reasons to implement ISO 14000 standards including the improvement of compliance with environmental laws, reduction of the number of audits required by regulatory agencies, and compliance with customers requiring registration to ISO 14001.

Pun, Hui, Lau, Law, & Lewis (2002) see the implementation of an Environmental Management System (EMS) as a prerequisite for high environmental achievements through environmental practices. They developed a framework which allows a planned implementation of EMS. This framework consists of five stages: Formulation of environmental strategies; Identification of EMS opportunities and barriers; Design of organizational infrastructure; System building an implementation; Evaluation of EMS competitive impacts. It is stated that the success of an EMS

depends on several characteristics and factors. Paramount is support of senior management, along with encouragement of environmental initiatives that emerge from the employees. A management structure is needed that integrates environmental issues and all other business operations. Important is also that the environmental strategy and management system blend with the existing culture.

Strachan (1997) observes, critically, the effect environmental management standards such as the ISO14001. It is said, that an EMS designed along with such standards may try to build a centralized, hierarchical, formalized management system leading to a mechanistic management approach and is therefore not suitable for an ongoing improvement of the environmental performance. The progressive environmental improvements necessary for implementing GSCM are similar to the approach related to the philosophy of Peter Senge's learning organisation. Management standards place too much emphasis on controlling and monitoring, instead on generating learning by using the employees' abilities of experimentation, systematic thinking, and thinking beyond current paradigms. Flat organizational structures with a participative leadership and management style help to facilitate the learning organization. Unconstrained work places where the job holder can exercise complex cognitive and social skills, motivates, unshackles talent, and enhances a company's potential to reach such a state of unrestrained generative learning (Strachan, 1997).

Miller (1997) focuses on strategy implementation in general and finds the following factors have the most influence on a successful strategy implementation process: Backing, assessability, specificity, cultural receptivity. Backing means that all executive managers are in favour of the new strategy. Assessability means that the main actors know what the strategy has to look like and how to assess it when eventually implemented, how it works and what it can do. Specificity is the detailed planning of the implementation and the prerequisite that everybody knows when to do what. Cultural receptivity considers the company culture which requires openness to new ideas and changes.

Trowbridge (2001) and Handfield et al. (2005) see the need of the alignment of the corporate strategy with the environmental strategy. This is supposed to be critical for success as "strategic consistency is paramount" (Handfield, et al., 2005, p. 2). Handfield et al. (2005) describe how to put a GSCM strategy into practice. The process consists of several steps: Definition of the item

with the highest priority, conduct research about the matter, develop strategy and objectives, implement the strategy, and finally monitor the process.

Thus top management support is very important for a working GSCM system (Handfield, et al., 2005). There is a need for a mechanism to ensure their support and not leave the system to be dependent on the executive's personal concept of morality and ethics, or their opinion of whether a green strategy might bear success. Cordeiro & Sarkis (2007) find that in companies where environmental performance indicators are already in place, it is very likely that the top executives' compensation is linked to these indicators. Moreover, environmental performance is better in those firms than in other companies.

2.5.3 Management of people and company culture

Daily & Huang (2001) elaborate on EMS and focus on human resource (HR) factors. To achieve a successful implementation employees are considered to be the paramount issue. They find the following factors to be of importance: Top management support; Environmental training; Employee empowerment; Teamwork; Rewards system. They stress that management should not just support the environmental efforts, but there needs to be an effective flow of information. The environmental programs, initiatives, and goals need to be communicated frequently.

Similarly, Govindarajulu & Daily (2004) focus on the need of motivated employees for high environmental performance. They see four factors supporting successful environmental practices through employees: management commitment; employee empowerment, rewards and feedback. For them the commitment and support of the top management is the key. Top management has to decide about the environmental policies as well as the level of training and communication. Lee & Rhee (2007) found in their research that top management's attitude towards environmental issues is an important factor in the ultimate depth and extent to which a company implements environmental management. The organizational culture is supposed to support the environmental efforts and makes it clear to the employees what is expected from them. The environmental programs, initiatives and goals are communicated frequently and the employees have the freedom to make environmental improvements. Employee involvement (EI) programs are considered to be helpful. Especially in manufacturing and producing companies, team-based EI programs are promising to use the knowledge and expertise from the

shop-floor employees (Govindarajulu & Daily, 2004). The reward system must be deployed to encourage the employees' environmental participation through an integration of environmental factors in the performance appraisal.

A further motivator is regular feedback. This means managers should consistently give feedback on environmental achievements. Davies & Hochman (2007) stress that GSCM practices are only successful when the employees understand and support these practices. This will also require the commitment of the corporate leadership. They need to continually communicate the importance of these efforts and design their incentive system accordingly, so the employees understand that what they are doing, actually contributes to the companies' goals and objectives.

Pérez, Ruiz & Fenech (2007) see the advantage of the European Community's Eco-Management and Audit Scheme (EMAS) to the ISO 14001 in the consideration of employee involvement in their standard. The EMAS stresses the importance of employee involvement and also the communication with other stakeholders for a successfully working environmental management system. Through a better involvement of employees and their training the company may achieve a stage of effective organizational learning which also improves the environmental capabilities.

Organizational learning can be explained as an organization's adaptation to the external environment through improvement of processes, avoiding mistakes of the past, and incorporating this learning into the corporate memory (Robbins & Barnwell, 2006). Argyris (1977) found that that double-loop learning is most suitable in helping companies to change underlying assumptions, norms and beliefs and leads to real learning. This type of learning is just attainable through the inclusion of the employees, and helps to improve the companies' efforts in environmental practices. Pérez et al (2007) see the employees' awareness, as well as their knowledge, skills, and expertise as a critical factor for a working environmental management system. In their view the importance of management support is essential, but not crucial.

Ángel del Brío et al. (2008) endorse the idea of the importance of management support for successful GSCM practices. Furthermore, employee participation directed through the

organizational culture seems to be a critical nexus in the implementation of these practices. The authors state that advanced environmental strategies require the development of tacit skills through employee participation and teamwork. Thus the organizational culture is the key to a sustainable competitive advantage. This culture needs to be based on ecological values and a high awareness of environmental issues of the employees. The employees have to be motivated to support the environmental aspirations of their employer. This is partially possible through the linkage of rewards to the achievement of environmental goals.

Similarly, de Saá-Pérez & García-Falcón (2002), in their study about organizational capabilities development, state that employees are the main drivers for the success of a company and can even be a source of a sustainable competitive advantage. HR has to hire the right people and develop them for the environmental purposes of the organization so GSCM practices can be successful. Once a unique, high-performance culture is developed it is unlikely to be imitated by competitors. This is because tacit knowledge can not be copied easily. Even if some key personnel change to the competitor should occur, that firm is unlikely to copy a competitive advantage based on a superior company culture.

2.5.4 Relationships with supply-chain members

Companies rely increasingly on their suppliers' environmental performance. They are focusing on core-competencies and increasing outsourcing, which relocates responsibilities for design and engineering to the suppliers (Handfield, et al., 2005). Some companies require their suppliers to meet expectations concerning their environmental program, such as an ISO 14001 accreditation or product specifications (Sarkis, 2003).

The more a supplier is integrated, the more fruitful are the collaborative environmental practices (Vachon & Klassen, 2006). Vachon & Klassen (2006) accentuate two important characteristics of successful GSCM practices: environmental monitoring (focused on controlling the suppliers) and environmental collaboration (joint development of environmental solutions of customer and supplier through cross-functional teams). A rationalization of the supply chain might be beneficial for better GSCM practices. Suppliers welcome the efforts of their business-customers to extend the collaboration in environmental issues. They expect a more consistent customer base and higher profits for their efforts.

Cheng, Yeh & Tu (2008) examine the extent to which trust influences GSCM practices and find that trust helps contribute to better participation and communication between supply chain members to enhance inter-organizational knowledge sharing. Trust is necessary to overcome assumptions that the supply chain partner may behave opportunistically and exploit a knowledge sharing situation solely for their own advantage. Thus, trust is the key to sharing knowledge and expertise about the latest green practices, overcoming problems in the implementation of environmental processes, and managing the latest governmental regulations. This improves the competitive advantage of all companies in the supply chain and logically improves the application of green practices in the companies.

Thus, the supplier-customer relationship is an important factor for the success of an implementation of GSCM. Bala et al. (2008) see special relevance for instruments to overcome barriers and the development of monitoring tools. They also state that there is no regular pattern which guarantees the success of GSCM implementation. Before considering GSCM implementation, companies should consider: contract specifications (e.g. duration of contract, technical specifications), process implementation (leadership, existence of a pilot project, options of monitoring), market characteristics (competitive environment, main customer, cost and performance in comparison to former practice), supply chain profiles (direct or indirect acquisition), as well as supplier characteristics (degree of supplier involvement, size) as important factors.

Lee (2008) investigates the drivers for companies to participate in GSCM practices and posits buyer influence, government involvement and green supply chain (GSC) readiness as the main drivers. Buyer influence means, besides the usual market pressure, technical and managerial assistance of buying firms which causes a higher willingness of the supplier to participate. Government involvement includes technical and financial support, tax-incentives and other developmental incentives for environmental initiatives. GSCM readiness is indicated through managers' environmental awareness, cross-functional environmental communication (i.e. borderless communication among departments), and sufficient resources (human, technical, and financial).

Zhu & Sarkis (2007) investigate the moderating effects on GSCM. They believe that competitive pressure has the greatest positive effect on economic and environmental

performance. This occurs, they say, through the benefits of reciprocal learning in companies. Through benchmarking, business associations, and meetings, companies can mutually improve their capabilities. This is also considered to be the most cost-effective way to implement environmental practices. Companies can learn from other companies and avoid possibly expensive mistakes.

Nevertheless, the diffusion of environmental practices is not unproblematic. Ideas about how to implement and its actual execution change after traversing organizational boundaries depending on the companies' context (Stenberg, 2007). That is, organizations operate in different industries, markets, and regulatory environments. Most important is the difference in the company culture, and the support through top management.

Drawing upon this extensive literature review, the researcher decided to divide the analysis in five areas:

- Current green practices
- Strategic and operational planning
- Management structure, systems, and decision making
- Management of people and company culture
- Relationships with supply-chain members

These five areas serve as a methodological schema through which the research questions may be answered.

CHAPTER 3

3.0 Benefits and limitations of comparative case study methodology

It is noteworthy that most of the previous research done in the field of GSCM has been based on the case study methodology (Chouinard & Brown, 1997; Geyer & Jackson, 2004; Khoo et al., 2001; Matthews, 2004; Reinhardt, 1998; Reiskin et al., 1999; Seuring, 2001; Trowbridge, 2001). As such, it appears to be appropriate for the current project to adopt a similar research method. Yin (1994) sees the advantages of a case study approach in situations where ‘how?’ and ‘why?’ questions are asked and when the researcher has little or no control of the case. Furthermore, a case study approach enables the use of multifaceted sources of evidence, such as reports, protocols, guidelines, and especially interviews. Eisenhardt (1989) categorises the case study as a “research strategy which focuses on understanding the dynamics present within single settings” (p. 534). It is mentioned that the case studies can have multiple levels of analysis within a single study and that the data collection methods range from document analysis, interviews, and questionnaires to observations. They can be used to test theory or build theory. Another advantage of case studies is that they can be used to find out about a case retrospectively. The material can then be used to develop themes. From these themes, other, similar projects can learn the lessons of some of the difficulties faced by the examined case (Gill, 1995).

A comparative case study analysis seems to be the most promising form of research to find out about ways companies execute GSCM and how this can be done in an effective way. The comparative approach is appropriate because single-case studies cannot justifiably generate theoretical generalizations (Keman, 1993; Kohn, 1989; Nowak, 1989). Skocpol (1984) argues that generalizations can only be developed through comparative research. Nonetheless, in developing a comparative framework, issues do arise. Developing a framework for analysis is complex, sometimes requiring imagination. In comparative business research, these difficulties are often compounded by the non-transferability of concepts. It is particularly important if a balance is to be struck setting up a framework that can avoid “conceptual straining” (Sartori, 1973), whereby concepts become so general as to be impossible to apply. To minimize this, it

was felt important to concentrate on one business sector only, namely Food and Beverage (F&B), but these issues do arise based on factors such as firm size.

Hildrum (2007) used a comparative case study to review and contrast not only with the cases, but also with the underlying theory. The advantage of such an approach is the opportunity to get a holistic view on the matter and find out about unexplored relationships and mechanisms. Companies' functionalities vary broadly, and to observe a company's functionality in sufficient depth, qualitative approaches, like comparative case studies are suited best (Kim, 2003). It provides the required understanding of the underlying factors and the findings are found to be compelling and robust (Yin, 1994). Furthermore this approach allows a comparative case study for the observation of companies on different levels of environmental development, facing different problems (Angel del Brio, et al., 2008).

Thus, this research takes the perspective of a qualitative approach, considering the multiplicity given through a comparative case study and their different approaches to the matter of GSCM (Collis & Hussey, 2003). The qualitative paradigm encounters reality from a subjective viewpoint and represents one side of the paradigm continuum from qualitative to quantitative. Thus it assumes reality is observable, but the researcher makes subjective judgements about the observed, as he is himself part of the observed and interacts with it. This interaction changes his view of the observed, and it might influence the observed sample as well. Hence the researcher is considered to be value-laden and biased (Collis & Hussey, 2003).

One weakness of these qualitative approaches is the risk of building hypothetical constructs which means that the researcher observes a particular incident and derives a reason for this, but in reality the underlying reason is a different one (Collis & Hussey, 2003). For example when most employees of a company are very eco-sensitive, the researcher might derive it from the former environmental training session carried out from the company, but in reality the employees were already influenced by prior mass media exposure.

Another obstacle of the qualitative paradigm is that the researcher brings his own values and views into the research, and thus just finds out what he wants to observe (Kim, 2003). In this case the researcher might be highly concerned about ecologic issues and (consciously or unconsciously) influence the outcomes of the research in favour of GSCM, but the real findings

might be that GSCM just costs money and doesn't help companies to achieve a higher performance.

The research itself is an inductive process, so small numbers of samples (or just one) are observed, and a context-bound theory emerges after or during the research (Creswell, 1994). This theory is most likely just valid in these particular circumstances, but generalisations from one situation to another are possible if the characteristics of the studied phenomena are well understood. However, generalizability is usually not the aim of qualitative research, but a comparative case study is helpful to determine some regular inter-organisational patterns (Creswell, 1994). So, the credibility of this research paradigm is achieved through high validity but it is low in reliability. This means that qualitative approaches give reliability not so much status, or the interpretation of reliability is different (Collis & Hussey, 2003). High validity is of more importance, which means the extent to which the research findings accurately represent what is really happening in a particular situation. Therefore it is important to choose the right research procedures, the right samples and correct measurement to get valid results.

3.1 Sample Selection

The units of analysis used in this study were three mid-size companies, their current use of GSCM practices and the implementation phase of GSCM practices in the past. Because companies from different industry sectors work quite differently, this research will focus just on companies in the Food and Beverage (F&B) sector. Vachon (2007) remarks that a single industry approach has the advantage of similar processes and workflows. Furthermore, Zhu & Sarkis (2007) state that different environmental regulations lead to a heterogeneity of environmental practices in different industries. Although the F&B sector is broad, a common characteristic is the high customer sensibility to the products' attributes. Initially this research just wanted to focus on middle sized companies, from which a greater homogeneity in the organizational structure might be expected. Companies on the same stage of development are likely to have similar organizational structures (Hunger & Wheelen, 2002). Similarly Lee & Rhee (2007) state that environmental strategies depend on firm size.

Consequently, the prerequisites for respondent companies were: working in the F&B industry, having more than 50 employees, and the companies should use some green practices. After an

initial selection of possible companies with the help of the Sustainable Business Network (SBN) in New Zealand, a letter was sent to the respective participants and they were called to give consent for their participation. The preferred interview partners were the plant managers, because they seem to be the best interview partners respective to their knowledge about the companies GSCM practices as proposed by Vachon (2007). However, in the aftermath it was not possible for the third middle-sized company to participate in the research due to acute problems in the production process. Therefore a big corporation, Company C, was selected, which agreed subsequently to participate. This changed the foundation of the research, but revealed at the same time an interesting opportunity to examine the different structures and approaches of middle sized companies in comparison to a large corporation.

The initial contact to the companies revealed that functions and knowledge concerning their green practices are allocated differently in each company. Thus, the interviews were made with a mixture of occupations: Marketing Manager, Trading Manager, Operations Manager, Marketing & Sales Manager, Eco-Efficiency Manager, and Manager Natural Resources. Company A is involved in the fruit, vegetable and cut-flower distribution to supermarkets and retailers and has a special department for organic fruit and vegetables. They have approximately 300 employees. Company B is a juice-producer with two main brands which are on a different level of the perceived environmental friendliness. They have 65 employees. Company C is a dairy producer and has no special organic product, but is highly involved in green practices. They have around 16,000 employees.

3.2 Methods of Data Collection and Analysis

Semi-structured interviews are the basis for the present research. They allow a directed discussion of the topics of interest to elicit the interviewee's ideas and opinions (Cheney, Christensen, Zorn, & Ganesh, 2004). Most questions were prepared in advance and spontaneous questions might be asked were appropriate, or to get more information on a specific topic. Easterby-Smith, Thorpe & Lowe (1991) mention five situations when semi-structured interviews are appropriate: First, when it is important to understand the construct that the interviewee builds, as a basis for the judgements and views about a specific situation. Further, when the interviewer needs to build a clear understanding of the interviewee's perception of reality and the world, influenced by the interviewer. Third, the step by step logic of a process is

inexplicit. Fourth, when the discussed topic is highly confidential or commercially sensitive, and fifth, when the interviewee will not be completely open about the topic unless discussed in a face to face setting.

Due to the openness and interactivity, interview outcomes might suffer from a low reliability, as every interview is different (Cheney, et al., 2004). The aim was to bring the information level of each company onto a similar high level. Therefore some questions served as guideline for the interview (Appendix 1). The guideline questions for the semi-structured interview were derived from the reviewed literature concerning the factors for an effectively working environmental commitment of a company: Management structure, systems and decision making; Strategic and operational planning; Management of people and company culture; and relationships with supply-chain members. More details were gathered through company documents, like reports, internal guidelines, and protocols. The interviews took place in July and August 2009 and some follow-up questions were posed in September 2009.

All interviews were audio recorded on tape and transcribed. The software package NVivo 8 from QSR International was used to support the analysis of the data. The transcribed interviews were read repeatedly and continually coded as proposed by Creswell (1994). After the coding of the material, some nodes were created and categorized following the already established framework from the literature review. The established nodes were again refined and sub-categories formed. This foregoing work was the foundation of the findings section, and helped to clarify and connect the statements of the interviewees.

3.3 Ethical Considerations

The research project required all participants to complete a consent form, acknowledging that they have been briefed on the conditions of involvement and that their participation is totally voluntary. Personal details of all interview partners are strictly confidential and anonymity is preserved. Thus the real company names and the interviewee's names are disguised. Table 4 shows the characteristics of the respondent companies and respondents.

The information gathered in the interviews was secured on a personal computer with password protection. Only the supervisors and the researcher have access to the data collected, and

anonymity of participants in relation to their opinions and views will be preserved in all instances. The gathered data will be destroyed in five years.

Table 4 gives an overview of the examined companies, their main business, and the key which respondent has which position in the respective company.

Table 4: Characteristics of respondent companies and respondents

Company A		Company B		Company C	
Fruit and vegetables distributor		Juice-producer		Dairy producer	
Respondent AA	Marketing Manager	Respondent BA	Operations Manager	Respondent CA	Eco-Efficiency Manager
Respondent AB	Trading Manager	Respondent BB	Marketing & Sales Manager	Respondent CB	Manager Natural Resources

3.4 Limitations of research

The focus on the F&B industry might obstruct the view to issues faced by other industries. These industries might have other obstacles, such as stricter regulations, different competitive environments, other power allocation in the supply chain, etc.. Furthermore, the observed companies possibly were not representative of the entire F&B sector. Nonetheless, the purpose of the research is to work out some factors which are important for an implementation of green practices in companies. Although the discovered factors might be applicable to other companies as well, the findings are not meant to be generalized outside of New Zealand food and beverage companies. Further research has to verify the findings through a more robust and reliable method.

Another limitation of the research is the tendency of the respondents to present themselves and their companies in a good way in terms of environmental friendliness. Thereby some facts might be varnished or highlighted in favour of a better green image of the company. The setting of a face-to-face interview is trying to moderate this effect, but it can not be ruled out.

The biggest limitation of the present research is the utilized framework based on the literature review. It settles the way the collected material is analysed and how the findings are presented. This framework might prevent the researcher in his analysis from being open to new ideas or in his creative thinking about the findings (Collis & Hussey, 2003).

CHAPTER 4

4.0 Results

The results of the research are presented in an order designed to give the reader a comprehensible insight of the processes and practices in each company and to aid the following discussion. First, an outline of the most important green approaches in each company is given. Then the findings of the analysis of the interviews and the supplemental documents are arranged considering the main themes of the above developed framework. The findings are shown separately in each company in these sub-categories.

4.1 Current green practices

To give a better understanding about the dimensions of the environmental endeavours in each company, this section shows the main efforts in terms of executed and continuous green practices. None of the examined firms used the term ‘GSCM’ for their approach. Table 5 summarizes the main green practices of each company to give an overview.

Table 5: Overview of current green practices in each company

Company A	Company B	Company C
- organic products alongside conventional products	- organic product alongside the other, conventional product	- reducing and minimizing waste (e.g. use of whey instead of dumping / optimised use of electronic system to reduce paper usage)
- degradable plastic bags	- use of glass-bottles for the organic brand	- optimizing processes(e.g. use of hot water for other purposes)
- recyclability of panel-material attuned to recycling capabilities in New Zealand	- use of biodegradable, wood-cellulose based labels	- sophisticated recycling system
- use of flax, reed, and coconut-leaves based trays	- PLA- water bottle for the conventional brand	- protection of natural resources through training of farmers
- effective use of transporation	- green waste is utilized, rather than landfilled	- own research on improving sustainable production
- decision for more sustainable chiller-option despite cost-disadvantage	- use of sustainable energy supplier - use of rainwater as greywater - transparent roofing in factory	- encouragement of suppliers to be green through collaboration, procurement policies, and questionnaires

4.1.1 Company A

The most important and obvious green practice of Company A is the organic department of the company. Fruits and vegetables have to be sourced from organic suppliers according to the BioGro New Zealand Ltd. accreditation requirements. This also requires a separate handling of the organic products from the conventional ones through separate warehousing and processing.

Apart from that are the approaches that deal with more sustainable packaging. This is perceived to be the main effort of the company. The respondents state that they were thinking about the use of plastic bags made of PLA (polylactic-acid), which is a material made from cornstarch and therefore more sustainable than their counterparts made of oil. However the supplier couldn't give a guarantee that this PLA wasn't made from genetically engineered corn. This led to the rejection of the idea because the company didn't want to support the genetic engineering industry. This would have been contrary to their environmentally friendly practices, in their opinion. So they looked for an alternative and found plastic bags which were oil-based, but degradable, due to an additive. This plastic bag is more degradable than conventional plastic bags.

A second practice that takes into account the packaging materials is the use of recyclable plastic for the panels. Here the company considered the actual "recyclability" of the used material in facilities in New Zealand, so they don't end up in the landfill anyway. Another packaging improvement was made through the use of trays made of flax, reed, and coconut leaves. These are completely biodegradable and contain no oil. However, these trays are not used company wide in all products.

A further green minded practice is the effective use of transportation through best possible filling of trucks on one side, and a best possible route planning on the other. To be sure, these approaches are not just for the sake of the environment but also for lower costs through less transportation.

The business needs a lot of refrigeration, and when the company needed new chillers they chose to buy a more environmentally sustainable but also more expensive solution, in contrast to the harmful, but cheaper option. The cheaper chiller would have used a harmful gas for the ozone layer, whereas the more expensive chiller uses non-harmful gas.

4.1.2 Company B

Like Company A, the main green practice of Company B is their organic product. They have two main brands, of which one is organic. This organic brand came to the company approximately two years ago through acquisition, and is also certified by BioGro New Zealand Ltd.. This product brought some green practices into the company, some of which are now used with the more conventional brand as well.

The organic brand is filled in glass bottles for recycling reasons. Furthermore, these glass bottles are sourced locally to prevent carbon emissions, but also for cost saving reasons. To complete the sustainable glass packaging, the label is made from a wood-based material, which is completely biodegradable.

The other non-organic juice brand is mainly filled in cartons or conventional plastic bottles. But there is an approach now to change the strategic direction of this brand as well. A new water bottle is made from PLA (polylactic acid), i.e. it is not oil-based and is biodegradable being made from corn-starch. The water bottle gets the same label as the organic glass bottles, so it is completely biodegradable.

Another, more sustainable approach is the way Company B has chosen to get rid of the green waste. They tried to compost it, but this attracted vermin etc. and caused an issue when they were audited. Nevertheless they found another ecological solution. Farmers now take that green waste to feed their live stock. So, instead of going to landfill the green waste now has a practical use.

Other green practices include the water and energy supply of the factory. On one production site there is a big water tank to collect rainwater. This grey-water can then be used for basic cleaning or used as toilet-water. By doing this the company can save a lot of freshwater. Another efficiency approach is the installation of transparent roofing. This allows the company to switch off the factory light to lower electricity consumption. Furthermore Company B now acquires very sustainable energy through a new supplier of waterpower to generate electricity. This waterpower approach doesn't dam a river, but takes some water from up stream, routes it through a turbine and releases the water further down stream. That means the natural ecosystem is not affected as much.

4.1.3 Company C

Due to the size of Company C and the importance of environmental concerns, there can't be a single enumeration of all green practices, because there are so many. As Respondent CB states: *“So we are covering a wide range of activities, on farm, in processing, with communities and other partners, with our staff, so it's a range of programs that we have in place.”* For the implementation of many sustainable approaches the company works with public institutions, such as the Ministry for the Environment or city councils and local territorial authorities. This section will just focus on the examples given, to illustrate the various approaches.

Respondent CA sees the most important sustainable actions as reducing and minimizing things, and also optimizing processes. This statement can be seen as a recurrent theme in the approaches of Company C. Respondent CA stresses, that for that to work it is necessary to be aware of all aspects. Unlike in the smaller companies A and B, small measures can already have a big effect in a large company, for instance the change of a lid of a ten-thousand fold sold product from a non-recyclable to a recyclable material. Furthermore, the most important reasons for implementing all these practices are the economic advantages. He states: *“But my real role is to reduce it, to stop wasting in the first place, or reducing what's coming in. So, what I see as important is actually elimination in the first place, is minimization or elimination, is really, really important. So, being aware of everything,... Like, economics is what makes it. It's no use being sustainable, if you go out of business.”*

So, one example for optimization is the increase of the energy efficiency in the production of milk powder, where the resulting hot water is used for a heat exchanger. Another practice is the usage of the by-product, whey, to extract the nutrition and the proteins, which can be used for other products. Formerly whey was just dumped to the landfill.

Respondent CB sees a further main theme in the approach of Company C in the protection of the natural resources such as land and water on which the company is based after all. For instance farmers are informed and trained about green practices by company sustainability specialists. The company is also involved in research and development to improve the effects of some of their processes. For instance, one goal is to extract all phosphors from all site-dischargers.

The company has a sophisticated recycling system, which recognizes the actual usage of cardboard and all sorts of plastic. This can therefore be used as a performance measurement tool, with which goals can be set. A problem seems to be that some packaging material contains different types of plastic, or is contaminated in another way. Here the goal is to simplify the composition of these so it can be recycled. As an example, a label was changed from paper to the same type of plastic of the stretch-wrap it was packaged with. That change made it possible to recycle all of it, instead of dumping everything like before.

The usage of paper for office purposes is also measured, and the actual consumption is reduced through a better use of the computer-system. Electronic processes are adapted so people can use the computer in a way that print-outs are avoided.

4.2 Strategic and operational planning

This category presents all findings concerning strategic and operational planning in terms of the companies' environmental approach. Table 6 shows at a glance which items are present in each company.

Table 6: Comparison of strategic and operational planning

	Company A	Company B	Company C
Specific environmental guidelines from external organisations	√	√	√
Specific internal environmental guidelines	(√)	x	√
Specific environmental goals	x	x	√
Economic reward for environmental practices paramount	√	partly	x
Environmental practices focused on one product / brand	√	√	x
Importance of being environmentally friendly for the general strategy	not so much	more important	very important
Pay-off period for environmental practices	short	short	middle
Green practices are source of competitive advantage	partly	√	√
Key: Yes = √; No = x; In development = (√)			

4.2.1 Company A

Company A is divided into two parts. The main part of the company is the conventional distribution of fruit and vegetables. A small part, approximately ten per cent of the sales, is the distribution of organic fruits and vegetables. The main customers are New Zealand's supermarket chains and big independent stores, so there is no direct end-consumer contact. The business is family-owned and managed, which means the managing director and the chairman

are also the owners. The company is operating in New Zealand from Auckland, Tauranga, Cambridge, Levin, Wellington, Christchurch and Dunedin, and in total, approximately 300 people are employed.

The company has no specific environmental guidelines in place, apart from the requirements of the organic standardisation company BioGro New Zealand Ltd, which certifies organic products. Their requirements are mainly concerned about the procurement of organic fruit and vegetables, and the certification demands a special handling of these. Requirements from the supermarkets require pre-packaging for most organic products, which is contrary to the idea of an environmentally friendly product due to the extra rubbish produced. Hence, the main concern of the business is to ensure sustainable packaging.

The company has no particular vision or mission considering environmental or sustainable goals. The bigger, conventional part of the business is influenced by the small organic part of the business. For instance, decisions concerning the company's overall green waste were influenced by the organic division. In the organic division, sustainable value and characteristics are defined and directed by the engagement of the employees. Respondent AB explains: *"Yes, yes, absolutely right, anything vaguely environmental is definitely the organic department is where it starts from. And mostly from [Respondent AA], really. She puts the most effort into it, so far."* So, the organic department can be seen as an internal trendsetter for the whole company with impact on the practices of the conventional part.

In 2008 the company was inspired to introduce triple bottom line reporting for the whole company. Because of the high costs they refrained from hiring consultants and decided to develop their own strategy. Up to now, some meetings with representatives from different parts of the company have taken place to develop an approach to these practices. But it was difficult to get all necessary participants together. Mutual development is perceived to be important but not everybody sees the necessity of such a strategy. Respondent AA explains the reaction of her fellow colleagues: *"...isn't it what we are doing already?"* The strategy was supposed to fit into existing company culture and also make an economical contribution in special areas, which then have to be defined.

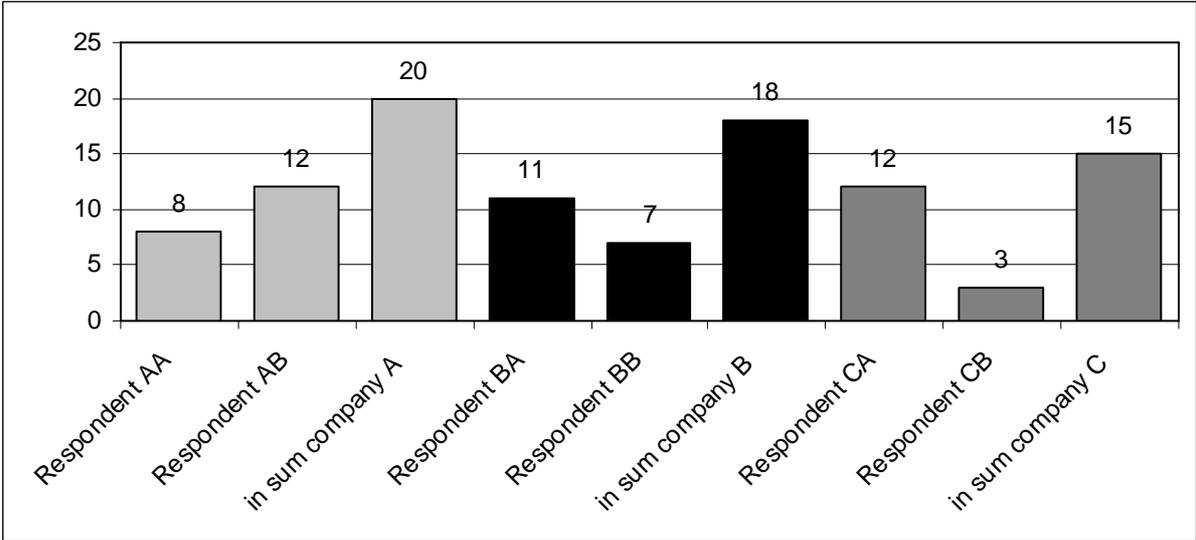
In context with the desired environmental strategy, both Respondents from Company A mention large corporations as a comparison. In particular, they point out that they have fewer resources than large corporations and cannot easily afford to have such an approach.

Respondent AA states for instance: *“You have the companies like Coca-Cola, or any of these guys, you have to have an environmental, you know, sort of memorandum in your company brochure, because otherwise everyone looks like, oh my god! You know.”*

The biggest driver for environmental improvements is the financial reward which comes along with sustainable practices, and a higher efficiency. Several times both Company A respondents stated that economic advantages are the reason for most environmental practices. Some practices introduced because of their economical advantageous character were recognised as environmentally friendly only in the follow-up. Respondent AA explains: *“It has always been... finally..., because there was an economic reward. And then, when we looked at this from another perspective: Wow, that’s a green practice, that’s a green practice, that’s a green practice.”*

Figure 1 shows how often financial topics were brought into context with their environmental practices by the examined companies respondents. There are three columns for each company. The first two show the number of responses for each Respondent separately, and the third column adds these numbers to show the frequency of mention for each company.

Figure 1: Financial incentive connected to environmental practices, frequency of mention



Nonetheless, Company A has practices which are not economical, have no real marketing effect, but are just ecologically rewarding. The decision for a green project is made on a case by case basis, as Respondent AB states: “...we are prepared to pay more for an environmentally friendly product, no problem. But it has to perform to the stand that is similar to the standard product.” However, the company is not ready to install green practices just for the sake of the environment, as Respondent AB makes clear: “I don’t think we have, at the company, we have such strong ideological approach to the environment, that we do it anyway.”

The organic department is currently more a supplement of the conventional business. It is perceived to be useful because their customers can get everything from one supplier. Oddly, the organic department is not used for marketing purposes so that the rest of the company can build an image of a clean, green company. Respondent AA notes: “...to be honest, even though we sell organics we will never go around and waggle the green flag.” Thus, it is not important for Company A to have a green image. Respondent AB sees the reason for this to be in the customers, particularly supermarket chains, who are mostly concerned about the price and the quality of the product: “there is only a couple of points that your product is actually measured on. One is the quality of the product, and the other is price, and that’s where we compete on with most other companies.” Therefore Respondents AA and AB answered differently to the question, if environmentally friendliness is a source of competitive advantage. Respondent AA sees the advantage in having both product ranges, conventional and organic, from one company. Whereas Respondent AB stresses again that price and quality are the important factors in the business.

It would be fair to say that market demand is not currently very focused on environmental topics. Company A would adapt to (other) market demands if the preferences should change. Respondent AB states by way of example: “...and we would respond..., obviously if that was one of our customers directives to look at that, then we would respond.” In this sense, the organic division is seen as an agent to be aware of what is going on in the organic market. If the demand is picking up the company can adapt, but the current pressure is around price and quality.

To sum up, strategic and operational planning in terms of environmental issues for Company A is quite basic. A strategic approach is intended for the future, but until now it is limited to the

organic division. The operational planning in terms of environmental issues is particularly made with focus on economic rewards.

4.2.2 Company B

Company B has two main brands. One product is especially positioned as an organic, environmentally friendly beverage, which is produced in Auckland. The other product can be categorised as a more conventional beverage, which is produced in Australia. The products are distributed in New Zealand, Australia and South East Asia. The company has manufacturing sites in New Zealand and Australia and in total approx. 65 people are employed. The company is listed on the New Zealand Stock Exchange (NZX) whereby the CEO is one of the biggest shareholders.

The company has no specific environmental guidelines. Like Company A, the only guidelines come externally from Bio-Gro New Zealand Ltd. In this case the requirements are mainly concerned with the sourcing of organic ingredients. Furthermore, there is no vision or mission especially concerned with environmental issues on a company wide basis. The organic part of the business has a statement about the goodness to the environment in its vision. Nonetheless, respondents stated that through the organic positioning of one brand the whole company is actually working towards more sustainability. This brand came to the company in 2007 and was very much characterised through its founders, who were very involved with environmental issues. They used the Natural Step approach. 'The Natural Step' began in Sweden and is a planning process for thinking about sustainability. Respondent BA describes the situation: *"So, it's driven by, around this brand, it's an organic brand, and we are looking for solutions, which, obviously, fit with the whole organic ethos."* A similar statement from Respondent BA: *"...and sustainability has come, has come sort of more to the fore as a sort of a, you know, overarching theme within manufacturing."*

This mindset also has an effect on the other brand in terms of more environmentally friendly practices. Respondent BA: *"We see it as..., that there is no point, we having this brand which operates organically, and this brand, which (...) doesn't have the organic thing, which doesn't do the things. So, we do try and cross that over to..., into the other brand."*

The branding of the products has the most influence on the environmental practices. Being environmentally friendly suits the image of the organic brand but may also have a positive effect on the image of the other, more conventional, brand. Due to the importance of brand positioning, there are also decisions being made that are environmentally friendly but not economically beneficial. One of the main drivers for Company B is the improved efficiency of some environmental practices (e.g. cost savings), but brand positioning apparently outweighs this factor in some cases. Respondent BA states: *“Because we could..., theoretically we could put a lot less environmental label on that, and it would cost a lot less, but for the business it’s about giving the consumers a premium product and we know they are buying it, because it’s organic, and because it’s in a glass bottle, and, you know, the label, it’s environmental, it’s all a part of that.”* Nevertheless, improved efficiencies are accompanied by cost savings as a big driver for green practices. These practices have to pay off at least in medium-term of one to two years.

Thus innovativeness regarding environmental practices is important for Company B. Consumers are offered options to choose new green practices, such as packaging. So the company tries to be at the forefront of environmental developments and to be a prime example and leader concerning these issues. Respondent BA subsumes the situation with the following statement: *“We try and keep up to date with things, and we try to being innovative, and to what our consumers expect,...”* Whereas Respondent BB states: *“So, as new opportunities have come along to become greener, we have done that.”* This statement can be seen more in connection with practices not in direct relation to the product, such as the installation of a rainwater-tank for freshwater saving.

This constant pressure to develop green solutions stems also from the increasing competition around environmental positioning. It is perceived to become more and more difficult to use a green image as a point of difference. Respondent BB states: *“So, it’s much harder to use it as a point of difference than it used to be. If you were organic five, or ten years ago, then you were quite different.”* And: *“Consumers almost expect that now, you know, that a company should be doing its most within reason to do the best for the environment, and not destroy it in the process of making money, or profits for the..., for its shareholders.”*

Moreover, Company B sees its main competitors as the large corporations and this puts on a lot of pressure because of the comparatively fewer resources at hand due to the small size.

Respondent BA explains the situation: “*We are challenged..., we operate in FMCG (fast moving consumer good) business, competitive large competitors, who have very low cost structures and are very competitive. So, that is the challenge we, sort of, we, sort of face, and...*” In this connection the respondents state, that being environmentally friendly is a source of competitive advantage.

Some rudimentary environmental goals exist such as the introduction of recyclable materials and other green practices, but there is no formalised list of goals as such, as Respondent BA states: “*... you know, for better or worse, we don't have..., we don't really have an environmental checklist of things. I guess, what we try and trial in our factories is best-operating practices.*”

To sum up, Company B has quite a basic environmental strategic and operational planning, which is still feeding on the efforts of the former owners of the acquired company. Existing strategic planning concerning environmental issues is especially marketing driven and also driven by economic reasons.

4.2.3 Company C

Company C is a globally operating business with branches and production sites all over the world. They address both the consumer market through some subsidiaries, and they are a vendor (on-seller) for other businesses. The company is a co-operative owned by thousands of New Zealand dairy-farmers, who are suppliers at the same time. The business employs approximately 16,000 people.

The initial impulse to introduce green practices as a strategic approach came generally from their own workforce and from the public, but top-management did not support environmental friendliness publicly until these efforts grew in importance for Company C. The focus of the environmental topics covered is mainly externally influenced through public institutions such as government and local councils. Company C is responding to regulation and trying to stay ahead of legislation. The company also follows directions where they think that these topics might become important in the future. For instance, water quality and availability is seen as an

upcoming issue in the industry. Environmental vision, sustainability strategy and group environmental policies are the cornerstones directing the company's efforts. Company C believes it to be important to have the environmental strategy incorporated in the general strategy in order to have maximum effect. It was a mistake, say respondents, that environmental strategy was not included in the overall strategy right from the beginning. As Respondent CB states: *"When we implemented..., when we wanted to implement the growth strategy, that should have gone hand in hand with that our sustainability strategy. (...)They are now, but... that would be the mistake that I would say that we made, just the timing of those, and not having a complete view of things."*

Apparently public relations are also an important driver for a proper performance of their environmental efforts. It is feared that, despite of all the sustainability programs, one mistake can have a negative effect on the image of the company and by that reflect badly on business' bottom line. Respondent CA condenses the situation: *"Now, it's unfortunate that you might have done something fantastic for ninety-nine percent, but one thing you've done is not so good, the media will focus on the one per cent and not the ninety-nine."*

Company C sees an advantage in being big in terms of resource availability and possibilities to enforce environmental strategies. Being big also requires an organized approach towards sustainability. Respondent CB comments: *"I think, some of the big..., because of our size, I mean, in some regards it's a benefit for us, because we have a lot of resources and opportunities, and can make a real difference."* Thus, the strategic and operational planning in terms of environmental practices can be described as very systematic and extensive. There are several clear goals and objectives, which are gradually realised in a professional way. To develop, coordinate and advance green efforts, a special taskforce was formed, the Sustainability Leadership team.

Objectives are prioritised to focus efforts on just a number of programs until they are properly implemented, and to avoid an overload of requirements for the staff. Respondent CB states accordingly: *"...we can't do it all at once, because, you know, to really get a good focus on particular areas, and to be able to communicate that well to staff, and not overload staff with the number of programs we got going on, we need to know, down prioritize what we doing and*

do those ones well, and then when we've got them bedded in, then we move on to the next ones."

The sustainability strategy is seen as a very important part for the future of the company. It is seen not just as an addendum to overall company strategy but as an essential part of it. The comment of Respondent CB expresses the company's attitude towards strategy: *"It's protecting our operation, it's all around being sustainable and viable. I guess it captures all those things, but it's around people doing the right thing, knowing the right thing, and can seeing some benefit from that. So, it's much more far reaching than just saving some money, or being able to say, look, you know, we are not damaging that river, or something. It's really about, the viability long term what we are doing."*

Furthermore, environmental strategy is seen as a source of competitive advantage despite the fact that more and more competitors are doing similar things. The key is seen in the permanent improvement of practices, a constant effort to stay at the top of the sustainable movement in the industry, and a consequent exploitation of technological advancements. Nevertheless it is obvious that economic reasons are also very important for the environmental efforts, as Respondent CA sums it up: *"Like, economics is what makes it. It's no use being sustainable, if you go out of business. True?"*

The effort of the New Zealand government to become a leader in sustainable issues is seen as critical. The high standards that the government wants to achieve might pose a barrier for a good business development, especially the emissions trading scheme. The opinion of the respondent CB is that the business itself is able to make the right decisions and doesn't need government interference, which might lead into a wrong direction. Respondent CB comments on this topic: *"I guess, I speak most particularly about emissions trading schemes, and what those sort of targets may mean for business, in the cost to business. And the alternative way that businesses would like to get there is through energy efficiency and research into alternative fields and those sort of things. I do see a bit of a conflict there, between setting very high ideals for New Zealand as a whole, and what that means for the businesses within New Zealand, and where businesses currently are, and the positions about being to promote around, you know, let us decide how we can be more efficient. (...). I don't believe it's gonna have the outcome that we're seeking."*

To sum up, Company C has the most advanced environmental approaches of the examined companies. They have an environmental vision, strategy, and policies. From these, operative goals are derived and systematically implemented. Sustainability strategy is not seen as an add-on but as an important component of company strategy.

4.3 Management structure, systems, and decision making

This section presents all findings concerning the management structure of the companies, how systems concerning environmental practices are put in place and employed, and how decisions about green practices are made. Table 7 gives an overview of the attributes of each company by way of comparison.

Table 7: Comparison of management structure, systems, and decision making

	Company A	Company B	Company C
Flat hierarchical structure	√	√	x
Ownership	family	public	co-operative
Specific environmental framework for decision support	x	x	√
Top management support perceived to be important	√	√	√
Measurement and monitoring of environmental practice	(√)	x	√
Key: Yes = √; No = x; In development = (√)			

4.3.1 Company A

The company’s hierarchy is flat with just three to four layers. This hierarchy structure promotes and allows short cuts for green decisions. Another supporting factor is the fact that the company

is family owned and operated. So, decisions can be made very easily and without considering and/or buying in third parties. Respondent AB states: *“...we are fortunate that we are a family-owned company, and, so decision making in base is really a very short shape from the top to the bottom. Right. There is one person. The guy at the top is here, and that is, say, me and [AA], and that is the store man, right? There is no big chain of command. It really is basic flat structured, pretty much, and so if we decide that we gonna do it, we do it tomorrow, that’s the beauty of it.”*

Concerning environmental issues there is no standardised framework to make decisions. These are made on a case-by-case basis and usually depend on economic performance. A term often used in this context is “making sense”, e.g. Respondent AA: *“We take it on a case by case basis. Really. That might be some things that are slightly more expensive we still, or a lot more expensive, and we still staying sustainable. As long as it makes sense.”*

This “making sense” can be seen a main theme for environmental decisions. Economic needs are balanced with environmental possibilities. This means that sometimes decisions in favour of the environment are being made even though they may be more expensive and less marketable. A train of thought by Respondent AA: *“Normally I would say, these days we go for the more sustainable option. But, in some cases it just makes it impossible. Like, we are looking at doing some of our net-loan bags that we use. You know, for when you are buying a bag of Kiwi-fruit comes with, you know, this net-loan bag. So, there is that company in Australia that makes that net-loan of degradable, or biodegradable net loan, right. They send me a quote and it was twenty times more expensive than the current one, that we use. Kiwifruit, you can buy these days, in wholesales for like thirty cents a kilo. The packaging was then to be more expensive than the product. In some cases it just doesn’t stack up just yet.”*

Decisions are made also through the determination of Respondent AA. She initiates ideas and promotes them at the top management. Her position in the company can be described as partially top and middle management. The support of the top-management is perceived to be crucial for the implementation of proposals but they are not involved in every decision involving green practices. Respondent AA states: *“...the people working in the organic department there is four of us. So, probably there is two of us, who really make the decision and the bosses are happy with what we decide.”*

Along with the development of the aforementioned triple-bottom line approach, Company A wants to install a system of measurements to monitor the results of their green efforts. Until now, no such a system has been in place. It is seen as the actual challenge to develop these measurements and the monitoring process. A further challenge is seen in the communication of the green message in the company, and the buy-in of employees. Respondent AA states accordingly: *“But, ok, we got three hundred people all over the country. How do we actually make sure that the message gets across in the right way. And we can actually measure, that we are making a difference, all those practices are making a difference and that, you know, and that we are actually helping promote change.”*

To sum up, Company A has no management framework in place to promote environmental practices. The hierarchy structure is flat and allows fast and easy decisions, also with regard to green projects, whereas some practices do not even need top management review. This allows case-by-case decisions. A system of measurement and monitoring of a sustainable strategy is planned, but not yet implemented.

4.3.2 Company B

Company B has a flat hierarchical structure as well, which allows short cuts for quick and uncomplicated decision making. Being a listed company on the New Zealand Stock Exchange might be a factor for the managers considering decisions for or against green practices, but it is not obvious. The support of the top-management is seen as crucial for the implementation of green practices according to Respondent BB: *“The critical thing is, that is has to be managed from top down, so management, senior-management, CEO, board, have to buy into it.”*

Furthermore this statement does suggest that decisions have to be made from top to bottom.

Concerning environmental issues, there is no standardised framework to make decisions. Here also, decisions are usually made on a case-by-case basis. The key for decision making is that the green practices must be either more efficient and pay for themselves, or they be marketable. Otherwise they are refused. That means that there are two motivations for green practices: efficiency and marketing. Respondent BB explains: *“Well, the management team makes the decision and the key department heads, and to be honest, if it’s consumer basing, so if the consumer is actually gonna see it, and it can be marketed, as a point of difference, it would get the green light, even though it’s more expensive, we will probably go and pay for the more*

expensive item, if it's more sustainable. Whereas, if it's something in the back, you know, out of sight, then it's less likely to..., it's more likely to come down to the price."

So, the decisions concerning efficient practices are not steered from policy or guidelines concerned with the environment but rather from the individual manager in charge. The goal is saving money for the sake of the bottom line, not for the environment. Respondent BA states: *"...so our driver is to have good manufacturing practices, because it drives our bottom line in terms of the costs at the bottom. It's not like, that the green principles, it's not the..., it's not really the driver, it's sort of multiple strings, but it comes down to the individual managers really, the production manager (...) is to drive those through to get efficiency in our, in our plant."*

Thus, the main drivers of environmental practices at Company B are cost savings and marketing, and here especially the new-product-development (NPD) team is named. Their main work is obviously market analysis and correct brand positioning. In part, they are the ones who come up with new ideas for green processes or they promote ideas as being important for marketing reasons. Respondent BA sums up: *"...you know a lot of these principles have been set up for us to say, here we are. They are now really the gate-keepers to make sure that the brand and the values..."* Respondent BB sees the role of the NPD-team in the same way, and adds that the NPD team is dependent on the input of others: *"But then, at the same time, often marketing doesn't know what's going on in every area. It's up to those departments to come back to us and go, hey we've got an initiative, that we think, could save money or, you know, the environment."* Although this input is recognised to be important, there are no systems to facilitate employee participation.

The decision making of the business is characterised by some risk taking, says Respondent BA: *"We try to take risks, but in doing so be the leader."* This risk taking attitude, combined with being a small company is seen as an advantage. It is perceived, that by that they can act agile and innovative to the needs of their customers.

To sum up, Company B has only a partial framework in place to support environmental practices woven into its marketing approach. The hierarchy structure is flat, which assists the

generation of environmental practices from the top-down. There is no system of measurement or monitoring of sustainable business practices.

4.3.3 Company C

The size of Company C has a relatively complex hierarchical structure as a result. To be operative, there have to be other systems in place, just as in companies A and B. C's approach to environmental practices is quite systematic. There are policies and programs in place to ensure an effective implementation of the environmental vision, for instance an approach called eco-efficiency. This program wants to improve use of resources for economic and ecologic benefits. Respondent CA states concerning the numerous systems: *“Yes, well, we’ve got a whole lot of that to the (...) like..., we’ve got an..., we’ve got policies (...). We’ve got an environmental policy (...). And, that explains, how we wanna look after the environment, and what the ownership is, on all staff. And, there’s another one there called eco-efficiency-standard. And that goes into more detail, what people need to do. We’ve got systems... we put in five, could be six years ago now, maybe seven, a model called..., used to be called “track”, it’s now called operational excellence, where we’ve got a commitment with the union, and that’s a program designed to look at all aspects of manufacturing, and... one of those is eliminating waste...”*

The previously mentioned Sustainability Leadership team is the main coordinator and developer of all environmental practices in the company. This cross-functional team consists of members from across the company to ensure a holistic view. This team also reviews submitted proposals for sustainable improvements. It endorses these proposals, assesses the resources needed for implementation, assesses a time line, gives feedback and then gives the task for implementation to the sustainability coordinator on the particular site. Respondent CB states: *“So, we have our sustainability leadership team and that’s got representation from people who are involved in our milk supply collection business, people involved with our own farms, that dealing direct with our farmers, we’ve got people from our manufacturing processing, we’ve got supply chain, procurement, marketing, corporate communication, and HR representation from a wide group. And that leadership team, because it recognises, sort of things we are doing, generally are cutting right across all business unit barriers.”* Thus the company not only uses top-down

decision-making but also bottom-up as it utilizes ideas from staff to develop and implement environmental practices.

Nevertheless, size is a barrier for the implementation of sustainable programs. Cultural differences of staff members in different countries are seen as a problem because the messages can be perceived differently. Thus it can be difficult to implement one policy that has relevance for all these people. Respondent CB illustrates: *“Because, you know, it can be easy for me to communicate it to my team, and a problem to do so to their team, but how do we know that we’ve made this policy, this environmental policy, which covers the whole group, how do we know that this sort of practices that are occurring in this team – I don’t know, somewhere in America - it’s relevant and it’s consistent with that, and that’s probably one of our biggest obstacles. Just our scale, and being able to get across all of our groups.”*

The company operates according to the guidelines of ISO14001. ISO 14001 refers to a family of voluntary standards and guidance documents to help organisations address environmental issues. Each manufacturing site has its own team appointed in charge for the ISO14001 accreditation process. This team has to ensure that the site-specific objectives are translated into operational targets. These site-specific objectives are not only derived from the requirements of the ISO14001, but also from other requirements, for instance legislation. Then these targets have to be achieved and monitored according to the ISO14001.

Another example for the systematic approach of Company C is the occupation of Respondent CA. He is the so-called Eco-Efficiency Manager, who is particularly in charge of the improvement of the waste streams. So there are specialists in the company, concerned with specific environmental issues. To have a better overview if all companies already comply with the wanted environmental standard, Respondent CA employs a tool, a spreadsheet, where he can visualize at which stage in each particular segment of environmental practices one site is. So, he can see at a glance where improvements are necessary and where progress is made.

The management support is seen as crucial for the enforcement of sustainable practices from both Respondent CA and CB. They are supposed to, not just to nod something through, but to really act according to their statements. Respondent CB explains: *“...we expect to see our CEO and our senior management team all walking the talk, as we roll that out. That’s critical for the*

people to think, that's a critical program that we are all part of." So the crucial part is not the actual implementation of a particular program, but the motivation of the staff to act accordingly. Another view comes from Respondent CA, who notes the importance of the pressure from both hierarchical directions to get environmental changes in the company: *"Certainly, without the support of senior management you won't... You get idiots like me who drive it, and drive it, but I need their support from up there to drive it both ways. They drive it down, I drive it up, and we make a difference."*

To sum up, the complex hierarchical structure of a large company like Company C can't operate without an environmental framework in a case by case procedure, like Company A and B are mainly doing. Therefore the company has several systems, programs, and policies in place to ensure the implementation of sustainable practices according to their vision. Like in Company A and B, Company C sees a high importance of top-management support.

4.4 Management of people and company culture

This category presents all findings concerning the management of people. This includes an examination of a possible company culture exploited for green purposes. Table 8 gives a short synopsis of the companies' properties.

Table 8: Comparison of management of people and company culture

	Company A	Company B	Company C
mission and/or vision includes environmental issues	x	(√)	√
strategies to ensure buy-in in environmental consciousness	x	x	√
all employees aware of the company's environmental efforts	x	x	√
Sustainability supporting company culture	x	(√)	√
Staff supposed to be important for success in environmental efforts	√	√	√
Use of cross-functional teams	x	x	√
importance of changing people's mindsets on company AND private level	√	√	√
Key: Yes = √; No = x; Partly = (√)			

4.4.1 Company A

There is no vision or mission, which could give the people a direction in terms of environmental values in Company A. Furthermore are there no other approaches to report or communicate these developments to the employees. Correspondingly most people in the business don't know about the environmental efforts, especially in the conventional side of the business on the shop floor. Thus, so far, a company wide distinct environmental conscious culture does not exist, at most in the organic department of the business. Nevertheless a plan exists to develop an environmental strategy incorporated in a triple bottom line approach including a vision and mission statement to guide the employees.

The actual best way to ensure a buy-in of every employee in the future seems to be unclear, but it seems to be obvious that it is necessary to ensure the success of the environmental strategy. Respondent AB comments: *“but to actually, get a descent result from triple bottom line reporting you need to have everyone involved.”*

Another necessary point is to have the “right” people involved in the implementation process, which means in this case people who are strong supporters of the idea and have credibility within the company. Respondent AA states: *“And when you have the right people involved, and I think that is an important part, has to be people that have credibility within the company and credential from leadership. Otherwise it’s not gonna get where you want it to go. So, involve the right people and make sure that you communicate the message effectively. But that is the challenge in this, like I said.”*

Again, the encouragement to act green comes primarily from the expectation of the company to work efficiently. The employees know that efficiency for the sake of cost savings is an important issue, and in that connection the environment is preserved. Respondent AA states: *“...that everyone, the message of the, of using green practices in terms of, you know, energy efficiency, any kind of efficiency that will help the company, those everyone is aware of.”*

Respondent AA gives an interesting view on the role of the company for the development of a green consciousness in their employees. She says that people can learn from the practices in the company to realise their impact and evolve to become a better person in terms of environmental behaviour. An example of this is the following statement: *“So, in a way, I suppose it brings... it gives a sense of responsibility to employees, you know, to tell them, hey, we can do this better and you can become a better person by doing it. You know it’s part of evolving, of becoming a better person. I think, it’s part of what I see with the people, you know. When you start to realise things like, they are starting, oh I never thought about that, you know. And, each one of us, of how whatever you do has got an impact what is around you, and the world you live, I suppose.”*

To sum up, Company A realises the importance of a buy-in of their employees in an environmental strategy, but hasn’t done any efforts in that direction, so far. It is planned that, with the implementation of a triple-bottom-line approach, an environmental vision and/or

mission statement are published. At the moment, any eventual green efforts coming from staff are justified through cost savings, whereas protecting the environment is not the driver.

4.4.2 Company B

Company B has no environmental vision or mission statement written down, and despite having one organic brand, it is unlikely that one hundred per cent of the employees are aware of the green efforts in the company. Furthermore there are no other instruments to spread a green message throughout the company, apart from the odd mention in the half yearly company meetings. There are no specific plans to put a vision or mission in place, or any other instruments to promote environmental awareness in the company culture. Nevertheless, it can be expected that a higher rate of employees knows about some of the sustainable intentions of the company, because of the historic development of the organic brand, and its importance for the business. Thus it can be said that a rudimentary environmentally conscious company culture exists, benefiting from the past of the organic brand. Respondent BB notes: *“I think people..., most people know that, that’s part of our DNA and part of our history. But, they probably should be reminded of that, a lot more.”*

Here it is apparent that the interviewee recognises the need of a communication of the company’s values to its employees. There are ideas of small approaches to put in place like the promotion of car-pools amongst employees through a bonus system, but that hasn’t been implemented, yet. Respondent BB says: *“One of the things that we were looking at putting in place was an incentive for people to car-pool, or take public transport. So, that’s an initiative that we are looking at to put in place. So, for each day that someone uses public transport, or car pools with, you know, another employee, they get a point, for example. And that point then accumulates and they can redeem those points for products or (...) products to take home. So, there is something that’s going in place there, but there should be more of it, as well.”* So, like Company A, Company B thinks it is important to influence the people’s mindset towards more sustainability not just on the company level, but also on a private level.

To sum up, Company B has a basic environmental company culture, stemming from the past of one of the main brands. Currently, this culture is not specifically nurtured or promoted. There is no vision or mission, nor other systems to promote it. There is awareness about the importance of the topic, but there are just some basic plans to actually realise an improvement of the

company culture in terms of an environmental consciousness. Furthermore, this helps the positioning of one of the two main brands to identify the company's standing point towards green issues.

4.4.3 Company C

Company C has an environmental vision from which ultimately all activities are derived, especially in terms of staff buy-in. They try not to overload staff with too many programs and policies, and focus on the ones which are relevant for the people on a particular site. It has tried to have a gradual process, where one process is implemented at a time, with the goal that by and by these practices go over into a natural behaviour of staff, for instance less usage of paper for copies or recycling of rubbish. Respondent CB states: *"...there is no sort of quick, quick-easy solution, it's ehm... you know, changing culture and things which take a period of time, it might be years."*

Staff input is valued in Company C and they try to encourage people to come forward with ideas. They want to use the skills and experience of these people to improve their environmental achievements as Respondent CA indicates: *"But, we've always utilized the strengths of our people. So, people who have good knowledge of processes, and we've basically brainstormed of what is the best way to do this, how can we do it, and the best way, again reduce costs, reduce raw material usage, and produce as much product as, I suppose, we can."*

The size of Company C is seen not just as an advantage. As already mentioned in the previous section, it is a challenge to coordinate the policies across cultural boundaries. The same policies might be perceived differently, due to different interpretations in other cultures. Respondent CB exemplifies: *"We've got people working in a lot of different countries, that are all part of (Company C) staff. It's getting the right messages, that are meaningful, from New Zealand, to be meaningful for our staff in China, our staff in Asia ehm... to be able to, to cross all those cultural barriers, geographic barriers, and be able to implement one policy, and..., but have it relevant to the countries, and the staffs in different roles is probably the biggest obstacle."*

It is not just cultural differences which make it difficult to implement environmental programs successfully, but also hang-up mindsets. It is perceived that people don't like change, so this makes it difficult to convince them to participate actively. Respondent CA puts forward:

“Probably the biggest obstacle is, getting people to change. Change what they’ve always done here (indicates blinkers with his hands). People don’t like change, they love to do what they have always done basically. So, it’s been a mindset, it’s ownership, it’s getting people to take ownership and responsibility, yeah.”

So, the messages need to be clear and communicated well. This happens with the help of internal magazines, meetings, and other types of communication tools. Respondent CB explains: *“... we have a lot of staff communication, and awareness-types sessions, and meetings and things. I would like to... and posters up around the place, and there is action-groups working. I’d like to think that everyone would be aware.”*

Another lever to cultivate the buy-in of the employees is the exemplary behaviour of the top-management. They need to buy-in as well, and act accordingly, so the staff can see that they have to stick to the rules as well. The successes need to be sold to the staff, so they can see that their mutual efforts make a difference. Respondent CB explains how it works: *“You know, it’s written, and it’s in a format which is appealing, you know, it’s with photos and it’s done professionally, and it’s a regular thing, and it’s pretty good stuff. (...) But, I don’t think it’s the most important way, I... The most important thing to me is that people see that what they are doing makes a difference, and they see that it’s consistent with what senior management are doing, you know. So, there is not one rule for these people and there is another one for these people.”*

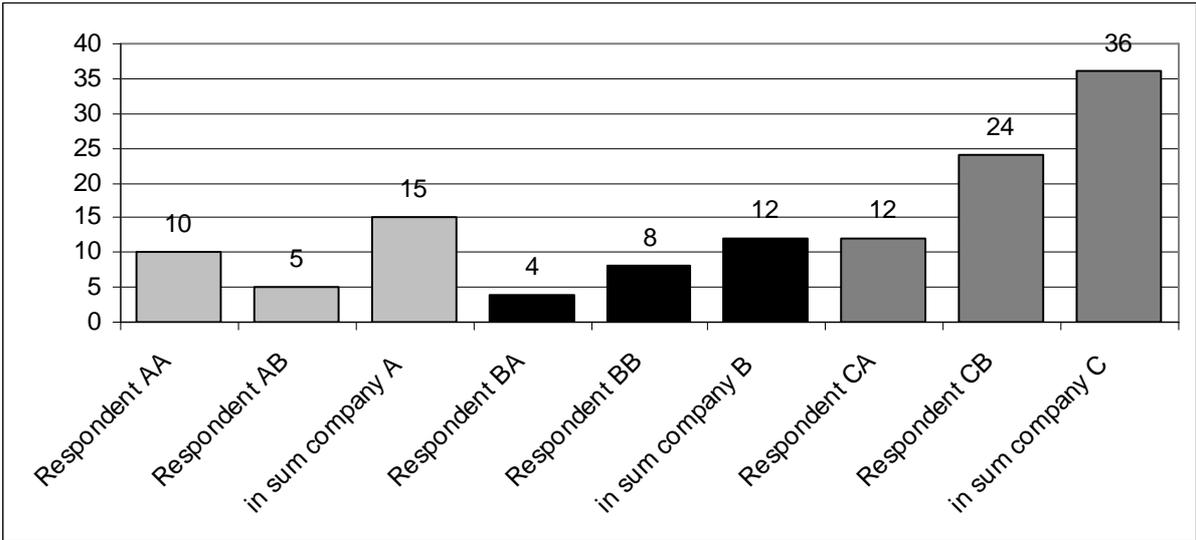
A further tool to ensure the buy-in of employees and to keep the programs alive is competition. There is an award on an individual level called the CEO-Award, which is given every couple of months to a person who has put outstanding efforts into environmental improvements, and there is a collective award for the best performing manufacturing site called Best-Site-Cup, given annually. Respondent CB assumes that nobody wants to be seen at the bottom of the rankings: *“And, I guess, we just track our progress that each part is having in its very program, so. And they are competitive, they do..., you know, no one wants to be at the bottom, and be seen (...) on it.”*

Similarly to Respondent AA, Respondent CB mentions not just the significance of a buy-in of staff at the company level, but also on a private level. In her view it is important that the

employees are changing their course of action at home as well so they can make a difference in their communities. Her comment is: *“The challenge is for them to go home, and in their community, and in their own homes, to actually practice[ing] some of the stuff, too. But that has actually become something which is not just a work driven initiative, it’s actually something that it changes their culture and mindset, it’s practice which they see is just coming business as usual, and the right thing to do, and just do it by..., without thinking about it, really.”*

In general it was conspicuous how often Respondent CA and CB mentioned the staff in the interviews. Figure 2 is showing a bar chart, where all respondents are compared in the frequency of mentioning the staff. Respondent CB mentions again the importance of the buy-in of the employees not just on the company level, but on a private level as well.

Figure 2: Importance of employees for sustainable strategy, frequency of mention



To sum up, Company C tries to implement a distinct and strong environmental company culture. Due to their size there is a higher necessity to organize their efforts. Therefore they have systems in place, like the link of remuneration with environmental performance, competitions, communication strategies, and they recognise the importance of the buy-in of top management.

4.5 Relationships with supply-chain members

This section shows results about the companies' relationships with its supply-chain members which can be in both directions, further down or up the supply chain. Table 9 shows the main characteristics of these relationships in the examined companies.

Table 9: Comparison of relationships with supply chain members

	Company A	Company B	Company C
environmental guidelines for suppliers	(√)	(√)	√
other systems, like customer questionnaires	x	x	√
collaboration for environmental goals	x	Partly	Partly
importance of business network membership	√	√	√
Mentioning of poor recycling infrastructure in New Zealand	√	√	x
Key: Yes = √; No = x; Just organic part = (√)			

4.5.1 Company A

The supply chain of the organic part of Company A is guided through the requirements of the BioGro certification. These guidelines define what the suppliers have to consider to be permitted as an organic supplier. Apart from these guidelines there are no specific frameworks or systems to choose a supplier in terms of environmental practices, for instance through supplier surveys or similar. The decision to have environmentally friendlier packaging has an effect on the collaboration with the supplier, through increased communication about the

performance of the new green packaging, and what future demand looks like. Nevertheless the involvement with the supplier is not a real collaboration in terms of mutual development of a packaging product, but merely a normal purchase procedure. Respondent AB states accordingly: *“I don’t think the stuff that we have done has been a particular collaboration. Really. Just been a matter of ordering it, and now we do it.”*

Thus the role of Company A in terms of working relationships with suppliers is very passive. They don’t play an active role in finding new packaging solutions, but leave these activities to larger companies or corporations. They have an eye on new developments and wait until new, more sustainable products become affordable for them.

Another important factor in the supply chain is addressed by Respondent AA. She mentions the poor recycling possibilities in New Zealand. The current situation impedes a proper flow of recycling materials in New Zealand. For instance the degradable plastic bags used by Company A can easily be recycled in other countries, whereas in New Zealand there is no facility to do it with this specific material. According to Respondent AA the situation is as follows: *“The reality of the recycle stream in New Zealand is not what it’s in our countries [allusion to mutual European origin], like people say: oh, this plastic bag can be recycled. The reality is that it can in some countries but there is no facility in New Zealand to be recycled. So, it’s really silly to say it’s a recyclable plastic bag, because it won’t happen.”*

Respondent AA praises the membership in a business association to improve environmental skills. It is stated, that especially the SBN is quite active and keeps them updated with newsletters and information about upcoming events. This is perceived to help to re-focus on the environmental topic and to keep the efforts alive.

To sum up, Company A doesn’t have a collaborative approach with their customers to develop greener practices, nor are there any systems in place to qualify suppliers as sustainable or not. Thus Company A’s role is the one of an observer, waiting for better and cheaper opportunities to be green. An important factor is addressed through the currently poor recycling possibilities in New Zealand, which make it more difficult to be really green.

4.5.2 Company B

The organic part of the business is guided through the BioGro requirements for organic fruits. According to Respondent BA the situation is as follows: *“We have to source ingredients, which are certified and approved by them. So, that drives our supply chain requirements for that product or range.”*

Like in Company A, there are no specific frameworks or systems to choose a supplier in terms of environmental practices, for instance through supplier surveys or similar. Nevertheless, one continuous practice exists, to source locally. This has environmental advantages in terms of lower carbon emissions, but also cost advantages because of less transportation. The loyalty to the New Zealand market is another factor to source locally, as stated by Respondent BA: *“...we try to source as local as possible, but again, the drivers for that is one, we do like to use New Zealand products, and see that as important in our product, but it’s also the cost is always..., if you can buy it local, you are gonna buy a more cost effective product.”*

The working relationship with the supplier concerning environmentally friendly labels can be seen as collaboration in terms of sharing a mutual goal and working together towards it. This approach can have very innovative and progressive effects like the collaboration with the label producer, which led to an environmental innovation. Respondent BA describes the process shortly: *“They came to us and said, look we have got this development in labels, we think that we can make your environmentally friendly, sort of, cellulose label, which is. And we were like..., and we said yes, that sounds great. And worked with them to develop it, and, yes, the first in the world to actually use this material in a label.”*

The collaboration was also made possible through the fact that the companies have known each other for a long time, and might have developed a trustful relationship by that. Respondent BA states: *“We try and have got working relationships, and with the label company, the (organic) company has been with them for about fifteen years.”* Thus, the overall approach of Company B with its suppliers can be described as the pursuit of a trustful partnership.

Nevertheless can the findings about the collaboration with the label supplier not be generalised. Another working relationship described by Respondent BB can be described more as passive, as in Company A. The producer of the green PLA bottle can’t deliver a product, which can be

used for warm-filling, so far. Company B doesn't pursue a collaborative approach, but waits until the supplier comes up with something. Respondent BB illustrates: "... we sort out that bottle from them, but it was already existing, but we have said to them, if they could develop something, that could do warm-fill, then we would consider taking it, depending on price, of course."

Similar to Company A, Company B faces problems regarding the recycling stream in New Zealand. Again there is a comparison to the possibilities in Europe, which are perceived to be more sophisticated, due to the size of the market. Respondent BB states: "*New Zealand's infrastructure prevents..., and size, prevents us from doing a lot of things that could be best practice in Europe, for example. You know, like the recycling systems, or, you know, there is... all about plastic, and there is some scepticism around New Zealand, because the plastic gets shipped off to China.*"

Another New Zealand specific issue is addressed by Respondent BB. He states that there are not enough possibilities to dispose recyclable rubbish at public collection points and would like to see a change. However, it is obviously not possible for a small company like them to change that, as Respondent BB remarks: "*You know, one thing, we would like to see more often is recycling bins in public places. And, you know, so we have to try and lobby the council to try them to get those bins in. It's not something that we can go and do.*"

Respondent BA describes a further problem. After launching a new product in a new biodegradable packaging some competitors complained and the recycling council of New Zealand joined in on the discussion. Respondent BA explains the situation: "*In the moment, when we launched this, we had five complaints to try and shut us down, and, you know, because of us..., saying this PLA bottle contaminates the waste stream, and you wouldn't... And, that sort of pressure, you also face when you are a pioneer in the field is..., is... You get these... You know, Coke... for the very reason, that they don't want you to be successful, so they come from every angle*" and: "*I had meetings with the recycling council of New Zealand saying, well, we've got complaints about this, you are contaminating...*"

Respondent BB acknowledges the importance of a membership in a business association to develop skills in environmental management. They are participating in a program of one

association, but it is stated that the company doesn't utilize their services currently due to lack of time.

To sum up, Company B has a collaborative working relationship with at least their label supplier. The outcome of this collaboration is an environmental innovation. The other relationships are more passive in terms of environmental developments. There is no formalised system in place to qualify suppliers as sustainable or not. Again the issue is addressed, that New Zealand has limited recycling capacities and abilities compared to other markets, due to its size. This is seen as a drawback for environmental efforts made by the company.

4.5.3 Company C

Company C has a systematic approach to their working-relationships with their suppliers in terms of environmental issues. Firstly, the vendors are separated in two different groups, first the co-operative shareholders, who obviously enjoy a special status. The other group are all the other suppliers, like service providers or suppliers of goods. The company works very closely with its shareholders, who are mainly dairy farmers, to improve their processes in terms of better sustainable practices. Therefore, specialists go onto the farms to talk to the farmers on the spot about the requirements and their possibilities, not just to be more sustainable, but also to be more efficient.

The cooperation with their "normal" suppliers is usually not that close, but for critical suppliers, where changes could make a difference, the company seeks collaboration. For instance, Respondent CB talks about a conference with packaging suppliers, where they were talking about long term goals and objectives, and how they want to get there. Through that suppliers can build a better understanding of the needs of their customer and adjust to that. Respondent CB states accordingly: *"Recently, we had been together at a conference, where we ran through what our environmental goals were, where we wanted to head, and sort of things that we wanted to see in a partnership with us to help us to look at those. So, yeah we are working in partnership."*

To ensure the best possible sustainability of their suppliers, Company C has started to use supplier questionnaires. First all high risk companies are asked to fill out a questionnaire concerning their sustainable practices, but also about their social sustainability and ethical issues

(e.g. child labour). After that, all companies have to go through this procedure, and appropriate measures are taken to improve sustainability performance. Respondent CB explains the procedure: *“They might be high risk because we have some concerns about manufacturing practices, we have concerns about whether or not it’s a sustainable process, it might be palm oil, or it might be child labour concerns and those sort of things. We don’t do business with those sorts of operators.”*

Nevertheless, Company C can’t enforce sustainability practices in all their suppliers. Some just have a strong position, like a monopoly, and they just can encourage green practices, at most. But usually the prospect of a long term partnership with a big company like Company C has a positive effect as Respondent CB states: *“So, it’s a gain for them, because they get long term business, gain for us, because we achieve our goals.”*

The membership in business organisations with environmental friendly intentions is highly recommended from Respondent CB. She states, that it is good to learn more about new processes and get some ideas for the own operations. Especially, for companies who are just beginning to start with sustainable practices, it is supposed to be very helpful: *“Because you can just mix and mingle with like minded people. It might be different businesses completely. But often, that sorts of things you’re trying to do, whether it be, you know, smarter practices in the office, whether it’s energy efficiency, fuel efficiency... They all, they all kind of doing the same kind of stuff. I mean, the basic principles are usually the same, and you can learn a lot from talking to others and networking with people like that. So, they are very useful. It would be good to get involved, if you’re just starting up.”*

To sum up, Company C pursues strong, collaborative relationships especially with their shareholding suppliers, but also with important conventional suppliers they are seeking a collaborative partnership for joint developments. Company C has a supplier questionnaire under development to ensure best possible environmental and social practices from their vendors. Moreover procurements policies help to ensure sustainability. The membership in business networks with sustainable purposes is highly recommended.

CHAPTER 5

5.0 Discussion

The purpose of the research is to examine how companies in the F&B sector in New Zealand work to implement green practices. This chapter discusses the findings from the research reported in the interviews with Company A, B, and C aiming to answer the research question. The overall research question is:

- What operational factors within a company's control are considered to be most important for Green Supply Chain management in Food and Beverage companies in New Zealand?

The section is divided into the main themes of the research framework: Strategic and operational planning; Management structure, systems and decision making; Management of people and company culture; Relationships with supply-chain members. In doing this, the discussion addresses the sub-questions of the research.

5.1 Strategic and operational planning

The first part of the discussion is concerned with the sub-question.

- What is the reciprocal effect of strategic and operational planning and environmental efforts?

Here we look at the companies' motivations to 'go green', as these have an important influence on how their strategy develops. Then each company's strategic approach to GSCM is discussed. A further section looks at the timeframe the companies consider for their green practices, and finally the future directions and challenges for the examined companies are discussed.

5.1.1 Initial reason to go green

Obviously, the companies did not decide to be green overnight. The decision to adopt green practices can be described as a process, influenced through a mixture of a higher public

awareness of environmental concerns, marketing reasons, cost savings, and exploitation of sales opportunities (Lee & Rhee, 2007; Vachon & Klassen, 2006). Especially for Company B this process wasn't something forced upon them from outside, but it came from inside the company through the acquisition of an organic brand. This seems to have had an effect on the environmental culture of Company B. Despite the lack of formalised procedures concerning environmental issues, employees did come up with their ideas (e.g. transparent roofing).

For Company A the decision to have an organic product range triggered their environmental efforts. From that starting point the company began thinking about more sustainable packaging solutions and is now in a stage where a systematic triple bottom line approach is under development. One lesson learned from the examination of Company A and B could be that the implementation of one sustainable product, even if it is just a small part of the product range, can have an effect on the alignment of the whole company. This corresponds to Zhu et al., (2008) who emphasized the importance of inter-relationships and interdependencies of different green practices. This knowledge might be helpful for a careful introduction of an environmentally friendly strategy in other companies.

The reason that drove Company C to initially start with a sustainability program was a mixture of influences aforementioned above. Many employees wanted to do something towards more sustainability, regulatory pressures grew stronger, and the market demanded such actions increasingly. In the case of Company C top-management support can be seen as the most crucial of all three of these companies examined here. Through leadership's eventual total support, it was possible to include an environmental strategy into the general strategy, so it became an essential part of the whole company. Now it is seen as a crucial part of the company's strategy and a precondition for the long term profitability and long-term survival, as already stated by Khoo et al. (2001).

Furthermore all companies state that their green approach is a source of competitive advantage. The respondents of Company A are discordant, because in their business price and quality are the decisive reasons for businesses. However, all respondents acknowledge the business advantages an environmentally friendly approach can have.

5.1.2 Type of strategic approach to sustainability

In both Companies A and B, the desire to be green came not from some preconceived framework of analysis, but rather from people's mindset within the company. In Company A it seems to be Respondent AA (Marketing Manager), who in particular initiated the green packaging approach. In Company B the former founders of the organic part of the company initiated green thinking. Their influence outlasted the acquisition of the brand, but it is now being more and more implemented due to marketing reasons. So there are no specific goals or objectives regarding a sustainable development in Companies A and B. Not even the BioGrow (organic accreditation company) guidelines have had a strong effect on a strategic approach, as these guidelines are barely concerned about the sourcing of the ingredients and their handling. Thus, according to Srivastava's (2007) company classification system considering environmentally strategic types, Companies A and B can be classified as proactive companies, because they invested a moderate amount of effort and resources in their GSCM approach. Company C can be set a step higher as a value-seeking company, which means that environmental efforts were a priori integrated into the business strategy.

Thus the strategy of Company C was in contrast to Company A's and B's case-by-case approach, which was based on people's initiatives. Company C's had a systematic approach, which was necessary due to its size (Robbins & Barnwell, 2006). A case-by-case approach would have led to chaotic and inefficient decisions and tensions within the company, as well as with external stakeholders. It was also important to note that the respondents from Company C perceived it to be important to have the environmental strategy integrated with the general company strategy, as Trowbridge (2001) and Handfield et al. (2005) pointed out. Through that the overall strategy is without bias and has more assertiveness.

Instead of seeing the protection of the environment as a goal itself, the economic incentive is the biggest driver, more pronounced in the smaller Companies A and B than in Company C. This took the place of an environmental strategy as a driver and has partially the same positive effect in terms of sustainability. In the examined large corporation Company C the drive for cost savings is also prevalent, but it seems that while the small companies' environmentally friendly practices resulted from the search for more efficiency and effectiveness, in the large corporation it was the other way around. It searched for environmentally friendly practices, which in turn

are validated through cost savings. It might be that the embedding of a systematic approach facilitates environmental actions.

It can be said that following Hervani et al. (2005) there are indeed signs that small and middle sized companies have more difficulties and obstacles to overcome than large corporations, like Company C. Companies A and B made some efforts to commit to environmental goals so far, but a complete commitment is not recognizable. When comparing the two small firms, Companies A and B, we can see that company A is prepared to make small investments just for the sake of the environment (e.g. chillers). Whereas Company B wants to outweigh this investment with a positive result for marketing or the bottom line. One reason for this could be the ownership of the companies. Company A is family owned and managed, whereas company B is listed at the New Zealand Stock Exchange. Often, it is assumed, that public companies are mainly interested in short term success, contrary to family owned companies, from which it is suggested they are focusing on long-term goals. This evaluation could also be true for the implementation of environmental practices.

Compared to Company A, Company B is much more driven by marketing issues in terms of environmental efforts. This might be because of the different customer structure and the different product perception of the customers. Company A has mainly the supermarket chains as a customer, whereas Company B also has smaller customers, like restaurants and small food chains. These customers might strive to offer products which comply with their own image or even improve it (e.g. KFC, Burgerfuel). Another reason might be the different perception of the product in terms of the relevance of a brand. In the case of fruits and vegetables from Company A, it can be assumed that most customers don't consider the brand in their decision, contrary to the purchase of a beverage. The brand of a beverage, such as Company B's brand, can have a decisive influence on a purchase decision (e.g. Red Bull invests a lot of money into its branding). Another reason for the importance of the marketing side for environmental practices in company B is the competitive pressure. They have to use their unique premium positioning to be able to claim a premium price for their product, because the competitors are mainly large corporations with much lower cost structures.

One reason for Company C to be engaged in environmental issues is similar to the marketing reason of Company B, but must be understood more broadly. As a large corporation any

mistake made can have a secondary or incidental effect on the whole company. This might be an important issue to consider for the growth strategy of Companies A and B. They must be aware that a bigger company size comes along with a lot more public scrutiny.

Due to the lack of specific goals and objectives environmental performance measurement and monitoring is not an issue in Companies A and B – to date in any case. For company A this will become an issue with the Triple-Bottom Line approach. Company C is exemplary in terms of its performance measurement tools and monitoring methods. They have various approaches partly built on Six Sigma methods to get a good overview and a holistic set of measurements, including amount of waste, recycling materials, or emissions. Furthermore are the performance measurement embedded into the overall sustainable approach as seen as important by Handfield et al. (2005). This detailed information helps to find weak-points and to further plan improvements on an operational level.

5.1.3 Timeframe for green investments

An important indicator for the seriousness of the environmental long-term strategy might serve the targeted pay-off period. Some sustainable investments pay themselves off after a while and have economic and environmental benefits. For Companies A and B the pay-off period is short termed, at least at one to two years. Company C has a longer pay-off period of up to five years. On the one hand this can be seen as a demonstration of a more serious involvement of Company C, on the other hand their size matters, and therefore the available resources of Company C.

A further factor indicating the seriousness of the environmental long-term strategy might be the anchored strategic environmental system in the overall company strategy, which facilitates these decisions. A system suggests a more long term involvement than having no system. A last indicator might be that the company is already currently trying to forecast and consider future legislation. They don't want to head into challenges, which are easier to adjust to now, but need a lot more resources when considering them just shortly before they are valid. Thus it can't be ultimately determined what the reason for this difference is. This might be a topic for further research.

5.1.4 Future challenges and directions

The current economic downturn puts some pressure on all the companies, but nevertheless it is quite certain that they will carry on with their environmental efforts, especially since it is seen as a tool to be more efficient and to save costs. All companies state that being environmentally friendly gives them an edge over competitors. Each examined company has a different set of challenges for the future. Company A wants to develop and implement its own Triple-Bottom Line approach. It will keep an eye on the organic market to react if consumer demand picks up. Company B's environmental approach is standing at a crossroads: either it implements a systematic way to cope with environmental issues, or it keeps going as before and perhaps risks losing touch with their green heritage and not knowing where to go next. However, due to a combined marketing approach focused on innovation with environmental concerns, further green development is likely. Company C's future challenges are on a different level. Their challenge is to keep the momentum in the greening of the business and to keep people interested. Being sustainable is not really part of everyone's mindset in the company as of yet, and there is still a lot of work to do not only in terms of staff buy-in but also environmental improvements. Furthermore Company C is, like Company B, focused on innovative approaches and solutions. They want to stay number one in their branch of industry in terms of sustainability. So a challenge is to stay ahead.

Due to its size and importance for the New Zealand economy, Company C is also involved in lobbying and discussions with the government about the design of future legislation. The company is trying actively to balance their needs with New Zealand's aspirations to become a leading country in terms of sustainability.

5.2 Management structure, systems and decision making

This part of the discussion is concerned with the sub-question:

- How are the decisions concerning green practices being made? What systems exist?

The section starts with the examination of the hierarchical structures and systems relevant for any green practices. Then the influence of the top-management on the decision making process

is reviewed. The last sub-point scrutinizes the decision making foundations in terms of sustainability.

5.2.1 Hierarchical structures and systems

The flat hierarchical structures of Companies A and B allow them to have no systematic environmental guidelines as promoted by Pun et al. (2002). This helps on the one hand to make quick decisions and being flexible, so specifically Company B's goal to be an innovation leader is promoted. On the other hand a missing systematic approach might confuse stakeholders, because there is no or hardly any consistency, which might even hinder more efficient solutions. Clear goals are missing and staff (even top-management) might end up not knowing where to go. According to Strachan (1997) a flat hierarchal structure is a benefit to systematic exploitation the abilities of the staff. However, Companies A and B don't use this advantage fully, as they don't promote it with their staff.

Company A tries to change the situation of having no system through the introduction of Triple-Bottom Line reporting, but points out how difficult it is to find the right way. At the moment, their main problem might be that they have no environmental vision or mission, guiding them in their contemplations. However, the fact that Company A is family-owned, might be one reason why they are having a more long-term approach in terms of the introduction of a triple-bottom line approach in contrast to Company B which is publicly owned and this might be the reason for not having any plans for a systematic approach due to more short term thinking. Nevertheless it has also to be taken into account that Companies A and B have much fewer resources available than Company C due to the size differences.

Company B currently only has a marketing direction to sustain them, and, as already discussed, it might end up having trouble defining its own goals in terms of sustainability. Until now, the number of decisions made concerning environmental issues has been small and only a small number of people have been concerned with it, especially in Company A. This means that a case-by-case technique is not a problem.

There is no person especially assigned to deal with sustainability issues in Company A nor in Company B. Respondent AA is the environmental gatekeeper in Company A and that more due to personal engagement and interest. In Company B the marketing staff, and here especially the

NPD-team, has taken over sustainability issues due to the necessity of projecting an environmentally friendly brand image. Company C has a full range of teams dedicated only to environmental initiatives. This might be an indication for Companies A and B to think about getting a special team or working group only dedicated to environmental issues. This could help to develop a strategy and having a systematic environmental approach.

5.2.2 Top-management involvement

As already pointed out in the review of the literature, top management support is supposed to be crucial for the success of an environmental approach (Angel del Brio, et al., 2008; Daily & Huang, 2001; Lee & Rhee, 2007; Miller, 1997). Companies A, B, and C all correspond with this statement. In Company A the top-management support is primarily seen as the backing of the current environmental direction of the company. The top-management doesn't seem to have a direct or engaged involvement in this. This might be because of the low importance of the organic part of the business for the whole company. In Company B, the top-management support for environmental practices is grounded in the marketing aspirations and apparently the direct involvement is higher, which might be due to the importance of a green image for the marketing and consequently sales. So top-management support for environmental practices is primarily seen as a tool to increase sales. In Company C top-management support was important for the initial start of the green strategy and is now more characterised by backing like in Company A. Now they try to demonstrate to their staff how important the environmental approach is for the company, through the public support of new sustainable programs, for instance with the help of internal magazines.

5.2.3 Decision making foundations

Thus decisions concerning environmental issues are made in each company differently and are based on different foundations. For Company A, most decisions are currently made around packaging. These packaging decisions are supposed to "make sense" in terms of not being too costly and being comparable to a conventional product. Decisions concerning these packaging issues are then mainly made by the organic department without much attention of the top-management. For Company B, decisions are either marketable or more cost effective. This guides management in their decision making process. More important decisions are discussed in team meetings; here especially the NPD-team is named. In Company C decision making is

more complex. They are mainly based on the strategic goals and objectives. Proposals for new practices are either handed in and reviewed by a committee, or developed through the different environmental departments. Some decisions are also made by foreseeing coming legislation issues.

5.3 Management of people and company culture

The third part of the discussion is concerned with the sub-question:

- How important is the buy-in of all employees and the creation of a green company culture for the success of a green strategy?

To illuminate this part of the research the first section treats the topic of vision and mission in terms of sustainability. Then existing company culture in each company is discussed. A further point of interest is the importance of a complete change of environmental attitude for the implementation of green practices.

5.3.1 Vision and Mission

Again, some similarities between Companies A and B are identifiable. Both companies have no vision and/or mission to guide their employees in their environmental efforts (Geyer & Jackson, 2004). Amazingly, some employees might not even know about the current green practices, according to the respondents. This might not just lead to problems pointed out in the previous sections (losing direction), but also to the insufficient exploitation of the staff capabilities (Angel del Brio, et al., 2008).

There are no other strategies to ensure the buy-in of the staff, despite the fact that the respondents realise the importance of this. In contrast, in Company C the existing vision and mission have a stimulating effect, because derived from this several practices exist to obtain the buy-in from staff, including competitions, magazines, feedback and the feeling to really make a difference (Govindarajulu & Daily, 2004). Figure 2 in the findings section visualizes the importance of the staff for the environmental approach in Company C. Their respondents bring their staff in connection with most questions in the interview which indicates the significance and thoughts given on the consolidation of employees. The reason for this pronounced consideration of employees might be the ISO 14001 accreditation, which is promoting staff

participation (Pérez, et al., 2007). Furthermore Company C has more resources to afford such a strategy, because having all the above mentioned practices are expensive.

5.3.2 Company culture

A company culture which is concerned about the environment can be found in Companies B and C on different levels. In Company B the founders of the organic part of the business brought in such a culture, which is now exploited from a product-marketing and cost saving angle. Thus it can be assumed that the environmental part of the company culture is deteriorating due to deficient maintenance. In Company C such a culture is already in place in most parts, but as stated by the respondents it hasn't penetrated everyone's mindset yet (and probably never will). This culture needs permanent input to maintain the momentum through the named practices, like competitions. Monetary rewards are seen to be not very important to achieve buy-in. In fact there are some studies about the effectiveness of non-monetary rewards, indicating that non-monetary rewards can be at least as effective as monetary rewards (Govindarajulu & Daily, 2004). But the results depend heavily on the individuals' preferences.

The use of cross-functional teams is seen as very important to have a holistic view (Daily & Huang, 2001; *Suppliers' perspectives on greening the supply chain*, 2001). The effort put into the evaluation of new environmental practices through these cross-functional teams can be seen as another part towards a sustainable culture. In contrast, in Company A no environmentally concerned culture exists, but is aspired to with the coming triple-bottom line approach. The implementation of this strategy might become difficult, as one respondent already pointed out the lack of understanding for such an effort. Here again is the top-management support crucial.

5.3.3 Changing attitude towards sustainability

Interestingly in all examined companies, respondents talk about the importance of changing the people's mindset not just on the business level but also their customs at home. The staff are supposed to transfer the new skills and environmental attitude to their behaviour at home. This view might describe the importance of a change in the people's mindsets for a successful environmental approach, which encompasses that it is not enough just to dictate some green practices. The employees have to develop a real commitment which is not forced on them. Thus, having convinced people in the company it is important, not just for the execution of

these practices but maybe even more important for the development of new green practices. Here also the respondents talk about the “right” people, which are important for the development and enforcement of these ideas. They have to be in key positions in the company and confident supporters of the sustainability idea.

5.4 Relationships with supply-chain members

The last part of the discussion is concerned with the sub-question:

- Which types of supply-chain relationships are critical for companies to achieve their green targets?

This research sub-question will be elucidated in three parts. First the current practices in terms of collaborations with suppliers are examined. Then the importance of business network memberships is explained, and at last the companies’ issues with New Zealand’s recycling infrastructure are discussed.

5.4.1 Collaboration with suppliers

Companies A and B have a very similar approach in terms of environmental guidelines. The only requirement is the compliance with BioGro New Zealand Ltd., standards for their organic product range. Other than that there are no binding demands based on internal or external guidelines. The relationships of companies A and B is very focused on their packaging suppliers. This might be, because this is where the easiest improvements can be made, the so called “low-hanging fruits” (Handfield, et al., 2005). Also Zhu & Sarkis (2007) stated that green purchasing is the easiest approach for companies to improve their sustainability. For Company A it means there is no real involvement with the suppliers in terms of reciprocal learning or similar. The respondents stated that it was merely a matter of ordering it.

In comparison Company B has a more advanced relationship with some of their suppliers. In particular, they have had a long trustful relationship with their label-supplier, which was most likely the elicitor for the collaboration to develop the biodegradable label (Cheng, et al., 2008). This collaboration was very successful as it produced an innovative biodegradable label. The fruitfulness of collaborations based on trust is due to the better exchange of ideas and thoughts.

Thus the statement of Cheng et. al (2008) as well as Vachon & Klassen (2006) that collaborations are very productive can be confirmed by this example.

Company C has the most advanced approach to include their suppliers in their environmental efforts. One reason for this advance certainly is their size, which helps to persuade suppliers to comply and provides the essential resources to focus on environmental progresses (Kogg, 2003). The most important reason is their systematic approach to deal with their suppliers. They communicate clearly what they want and where they want to go. The given example was their meeting with all their packaging suppliers where they explained where they want to go and what their goals are. Similar to Company B, Company C works in collaboration with some packaging suppliers. So, it seems that packaging is not just for a small to middle sized company the simplest and best way to improve their environmental impact in collaboration with suppliers. This might be, because of the industry and its need of packaging. In comparison, mechanical engineering companies of heavy duty machines, for instance, would have most likely another emphasis than packaging.

Company C has further distinctive traits in terms of their supplier relationships. The company is working as a co-operative, where most of their raw-material suppliers are also shareholders of the company. Thus, the collaboration with these shareholders is of course very pronounced. Another factor is a supplier questionnaire, which was just introduced for the high risk suppliers to assess their performance in terms of sustainability (also in terms of social sustainability). Every single supplier will have to fill out this questionnaire and future buying decisions are supposed to be made more and more dependent on the results (Vachon & Klassen, 2006).

5.4.2 Business Network Memberships

All three examined companies state that it is worthwhile to be in a business association to develop their green practices. Especially Company C's respondents emphasize how helpful it is to talk to other companies who are maybe even from other industries, but have roughly similar problems and challenges to deal with. For Company A the role of a business association is a bit different and especially helpful to keep the momentum in the sustainable efforts. This statement illustrates how fragile the own efforts towards green practices are perceived. Company B also recognizes the importance of a business association membership, but it is stated that they don't utilize their services currently due to lack of time. Thus for Companies A and B the business

associations are not particularly important to develop new ideas and get stimulations, but their hypothetical significance is realised.

5.4.3 Recycling infrastructure in New Zealand

Respondents from Companies A and B both mention the recycling infrastructure in New Zealand. They talk about the insufficient possibilities to recycle every type of material, which is then either being exported, or goes to landfill. Another issue is the deficient availability of recycling bins in public. This situation is seen as contrary to their efforts and therefore discouraging. Apparently, Company C doesn't encounter these problems. This might be because due to the size of Company C they have more possibilities to make direct contracts with waste companies.

5.5 Summary of discussion

Company C employs most practices for a functioning GSCM approach. They have an organized and systematic strategic approach and try to include their staff, suppliers, public institutions and other stakeholders. Top-management is supporting the strategy and sees a real benefit for the company's ability to survive in future. Companies A and B have a long way to go, if they want to bring their GSCM system to that standard. Impediments to get there is firstly the lack of resources. They simply don't have the financial and people resources to bring an overarching GSCM approach all the way.

Another obstacle is the lack of a real commitment of top-management in Companies A and B. Instead of bringing their green practices more forward and installing systems with ambitious goals and objectives GSCM is left to a case by case and personal interest approach, the potential benefit of having a strategy is not utilized. The top-management might be paralysed by day-to-day business, but they must be aware that having only a half-hearted strategy to sustainability might endanger the long-term survival and prosperity of the firm (Grant, 2005).

The significance of an inclusion of the staff into the environmental endeavours is acknowledged by all companies. Nevertheless, only Company C seems to make a real effort to ensure the buy-in and participation of their employees. A company wide and well communicated environmental mission and/or vision are missing in Companies A and B. These could guide the

employees and demonstrate the company's standpoint. This in turn could lead with the introduction of clear goals and objectives to an active participation of the staff members.

CHAPTER 6

6.0 Conclusions

The research was focused on factors companies have to consider when implementing a workable GSCM approach. The research question was accordingly:

- What operational factors within a company's control are considered to be most important for Green Supply Chain management in Food and Beverage companies in New Zealand?

To answer this research question a theoretical framework was derived from the literature review, including the factors of: Strategic and operational planning; Management structure, systems, and decision making; Management of people and company culture; Relationships with supply-chain members.

These factors were addressed in the sub-questions of the research:

- What is the reciprocal effect of strategic and operational planning and environmental efforts?
- How are the decisions concerning green practices being made? What systems exist?
- How important is the buy-in of all employees and the creation of a green company culture for the success of a green strategy?
- Which types of supply-chain relationships are critical for companies to achieve their green targets?

6.1 Strategic and operational planning

One interesting result in the examination of companies A and B was the effect of the organic product range on the alignment of the whole company. The acquisition or rather introduction of environmentally friendly products leads to at least more thought given to being sustainable. Company A tries to implement a Triple Bottom Line approach, and Company B extends its

environmentally friendly packaging approach to the non-organic brand. This insight could be helpful for other companies to consider. It is not necessary (and most likely not possible) to shift the whole product range to sustainability right away, but it is advisable to learn from one green product. This finding corresponds with the statement of Zhu et al. (2008) about interdependencies and inter-relationships of different green practices.

However it is also advisable to integrate an environmental strategy, including an environmental vision and/or mission statement, into the general company strategy. This is essential to give the firm a direction on a strategic level for the long term planning of the top-management, as well for the operational planning to guide the staff in their daily routines.

Furthermore it is indispensable to derive environmental goals and objectives consistent with afore mentioned strategy. Companies A and B work on a case-by-case basis and should follow Company C's example and develop a set of measurable and explicit goals and objectives. Otherwise these organizations might lose track. Following Srivastava's (2007) classification system Companies A and B are proactive, and Company C can be considered to be value-seeking. The most important reason for this advance of Company C in its environmental approach is the size and in conjunction with that the advantage of having more disposable resources.

The most important driver for all companies to have green practices in place is the prospect of saving money. In most cases being more efficient, ergo more environmentally friendly, means saving costs. Also marketing aspects serve as a driver. In particular Company B emphasizes the importance of being recognised as innovative as an advantage against their large competitors. Another driver is to stay up to date about the market demands. Through their small organic department Company A is able to react if the consumer preferences change in favour of organic fruit and vegetables. All examined companies regard having an environmentally friendly approach as a source of competitive advantage, although more and more companies go in this direction.

To conclude, despite being in the same industry the research has shown, that each examined company is in a different situation with different factors influencing their environmental approach. Nevertheless one core characteristic should be to include the environmental strategy

in the general company strategy to achieve consistency. This ensures the aim of the companies to gain a competitive edge over their competitors.

6.2 Management structure, systems and decision making

On the one hand the flat hierarchical structures in Companies A and B are an advantage. Decisions can be made quickly and easily, which leads to a high responsiveness. On the other hand this flat hierarchy is another barrier to a systematic environmental approach in these companies. The companies do not see the necessity to adopt an environmental system, as it has worked without one so far. Despite being relatively complex, the environmental systems of Company C cultivate their green aspirations. They have monitoring tools; measurement systems; ensure staff buy-in in several ways, and top-management is trying to be a leading example.

All companies state that top-management support is crucial for the success of a GSCM strategy. They have to back the sustainable approach and show commitment. Furthermore it's their job to promote the implementation of systems to bring in the concept of sustainability in all layers of the company on a strategic and operational level. Nevertheless, except in Company C, top-management is not substantially involved in the promotion of a green strategy.

The decision making in each examined company is pretty much based on monetary aspects. Increased efficiencies through environmentally friendly practices lead to cost savings. There is no systematic way of decision making in Companies A and B. Decisions are made on a case-by-case basis and the general theme is that they have to 'make sense', which means the balancing of interests in marketing, costs, and effectiveness. Company C's decision making is based on the environmental goals and objectives derived from the environmental strategy. New practices are either evaluated by a cross-functional team or by the concerning department.

To conclude, an environmental management system including consistent goals and objectives is highly recommended. The top-management has to support these goals completely and adjust their company management accordingly. Flat hierarchical structures might be of help to have a successful GSCM approach, but this is not mandatory. However, if a flat hierarchical

structure exists it should be exploited as an advantage, for instance through much employee involvement.

6.3 Management of people and company culture

Employee buy-in and involvement in GSCM practices is important and supposed to improve the benefits of an environmental program. Despite the statement of Companies A and B that they agree to this position, there are no actions taken to ensure staff buy-in. There is no vision and/or mission to guide their staff or any other strategy to get employee input. However, Company C is trying hard to get staff buy-in with several approaches, including a vision and mission, magazines, exemplary behaviour of top-management, and competitions.

An environmentally concerned company culture is also a benefit for a working GSCM approach. Ángel del Brío et al. (2008) even state, that it is the key to a sustainable competitive advantage. Company A has no such company culture, whereas Company B partly has such a company culture due to the acquisition of the organic brand, but is not nurturing this culture. Company C has an environmentally concerned company culture, but it is stated that there is still work needed to improve and maintain this culture.

Interestingly all companies mentioned the importance of changing people's mindset not only for the business, but also on a private level. People are supposed to get used to environmental practices and transmit their behaviour at the company to their behaviour at home.

To conclude, employee involvement is indeed very important for a working GSCM approach. Companies have to exploit the potentials of their employees by providing a participative environment and valuing the attainment of environmental goals. The company culture is serving as a tool to facilitate a supportive environment. The foundation of staff involvement is an environmental vision and/or mission from which all practices can be derived.

6.4 Relationships with supply-chain members

The examined companies are partly guided in their relationship with their suppliers through accreditation companies. BioGro New Zealand directs Companies A and B in their sourcing of organic ingredients. Apart from that, the environmental approach of all companies is

heavily based on an improvement of their packaging impact as there seem to be the easiest improvements possible.

Collaborative approaches are promising the most fruitful results according to Cheng et al. (2008) as well as Vachon and Klassen (2006). Companies B and C are trying to comply with this statement and collaborate with some packaging suppliers. The examples from both organizations reveal that collaboration is indeed an advantage to achieve ambitious goals. Suppliers should be more included in their customer's efforts to improve their environmental impact.

A further interesting tool employed by Company C is the supplier questionnaire, where vendors are questioned about their sustainability in terms of ethics and environmental issues. Derived from their answer the company makes its buying decisions and by that changing the sustainability further up the supply chain.

According to Companies A and B New Zealand has to work on its recycling infrastructure. In particular are addressed the availability of public recycling bins and the recyclability of some plastics in New Zealand. It is stated that some sorts of plastic, despite being recyclable are being shipped overseas, or worse are dumped on a landfill.

To conclude, a collaborative approach is the most promising form of working relationships to achieve environmental goals. Companies should pursue this strategy first with suppliers where the environmental improvement would be the biggest. Other tools, for instance supplier questionnaires, are helpful to enhance their own environmental impact, and have an effect on the environmental friendliness of the whole supply-chain.

6.5 Limitations and further research directions

The research suffers from the deficiency of not being able to compare the initially agreed companies. This drawback was eased through the exemplary environmental approach given by Company C, which served as a standard for Companies A and B. Nevertheless, due to the different access to financial and human resources, a direct comparison is not fair.

Due to the unexpected non-systematic approach of Companies A and B in terms of their GSCM approach, the research was not fully able to make a comparison of the companies, as intended initially. Especially the management systems and decision making procedures are too much based on case-by-case situations, so a regular decision making pattern is not recognizable. But also the different or rather non-existent approaches to measure and monitor environmental efforts were not possible to compare. By that the initial intention of the research to compare different systematic approaches was not completely doable. However, every company has a more or less reasoned approach and this research could reveal some similarities of Companies A and B unsystematic environmental approaches (efficiency; cost savings; “making sense”). Due to the lack of possibilities to compare, the researcher can’t give a statement about the advantages of Company C’s systems compared to other companies’ approaches in the F&B sector, but derived from the literature review it can be said that it is on a high level.

It was found that Company C has advanced environmental systems in place, which might lead to a more long-term approach than in the other examined companies without a systematic approach. Derived from this finding, future research should focus on the prerequisites for a long term commitment of companies to support environmental efforts. For instance what influence the ownership of the company, degree of public awareness of the company, eventual environmental systems already in place, or other factors have on a long term commitment, which is preferable for the attainment of sustainable goals.

Eventually the New Zealand government has to set the general conditions with a regulatory framework to encourage companies to follow Companies A, B, and C’s example in trying to be more sustainable. New Zealand’s clean, green image in the world has to be maintained in order to support the mainly agriculture based export businesses. But the most important reason is to ensure that the planet is not overextended in its ability to maintain the people living on it.

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APPENDICES

Appendix 1: Guideline questions for semi structured interviews

- Which types of GSCM practices did you implement so far?
- Did you start with some GSCM projects simultaneously or one after another?
- How did you develop these GSCM practices? Through top-down decisions? Team decisions?
- What were the biggest obstacles during the implementation? How did you solve these problems?
- What are the most successful GSCM practices, and why do you think they are successful?
- Do you collaborate with suppliers to achieve environmental goals?

- Who was in charge to implement GSCM?
- How important is the support of the top management for GSCM?
- Would you say every employee is aware of the GSCM-efforts in the company?
- How do you ensure the “buy-in” of the employees?
- What kind of procedures are existing to encourage employees to support the GSCM strategy? (Incentives, budget-planning, performance measurements, etc.)
- Do you try to incorporate/include environmental consciousness in the company culture?
- Did you change the mission or vision of the company according to environmental aims?
- Do you have cross-validated guidelines to handle environmental issues? (ISO 14001)
- How do you communicate these guidelines?
- How do you handle problems like having the choice between buying a slightly more expensive but sustainable material, component or service, or buying a less expensive but unsustainable material, component or service?

- Do you see advantages of GSCM apart from protecting the environment and saving money?
- Do you think GSCM is a source of competitive advantage?
- Where do you see the biggest challenges to maintain successful GSCM in future?
- In your special case: What do you think makes your GSCM approach successful?
- If a company asked you for advice how to implement GSCM, what would you tell them?