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Development of strategic environmental work for a Swedish SME within the sports nutrition industry

Master's thesis in Quality and Operations Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2023
www.chalmers.se
Report No. E2023:126

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Abstract

Climate change has emerged as a critical global concern during the past decades and is a consequence of mankind's unsustainable way of living. The industrial is an important stakeholder who must incorporate sustainable development to mitigate climate change. Small and medium-sized enterprises (SMEs) constitute a significant majority the global economy and account for over 60 per cent of total emissions. Still, there is an evident lack of external pressure and internal motivation among SMEs to address environmental issues. The aim of this master thesis was to investigate the environmental activities of a Swedish SME within the sports nutrition industry to assist in identifying a starting point for a strategic and continuous environmental work. By offering quantitative indications of the case company's current environmental impact based on the Greenhouse Gas Protocol, investigating green practices, and triggering environmental discussions, the study has elevated the concept of sustainability to strategic level. A majority of the employees were involved in the project by giving their perspectives during interviews, which has improved the overall enthusiasm for sustainability within the company. The study intended to give the company an introduction to environmental work and not a comprehensive analysis of their environmental impact and all possible ways to proceed. The findings reveal that mitigation of carbon footprint could be achieved through adoption green practices, such as Management Systems (EMS), circular economy, and Green Supply Chain Management (GSCM). Furthermore, the company must overcome knowledge and information-related barriers by hiring environmentally savvy staff.

Keywords: SME, EMS, GSCM, greening process, SDG, sports nutrition, CE, GHG Protocol, strategic sustainability.

Acknowledgements

This project would not have been possible without several individuals who have aided us in data collection, guidance and inspiration. First and foremost we would like to extend our deep gratitude to our supervisor and examiner, Anna Nyström Claesson, for her invaluable expertise and support. We would also like to acknowledge Line Cederberg, Victoria Hæstad Bjørnstad, Linnea Jönsson and Alice Risp for their thoughtful feedback during our seminar sessions. In addition, we would like to express our gratitude to the case company and our supervisor, who wished to remain anonymous. Their support were instrumental in shaping our research.

Rasmus Hultén, Gothenburg, June 2023
Adam Pauli, Gothenburg, June 2023

List of Acronyms

Below is the a of the acronyms that have been used throughout this thesis listed in alphabetical order:

3PL	Third-party logistics
CEO	Chief Executive Officer
CO_2e	Carbon dioxide equivalent
COO	Chief Operations Officer
EMS	Environmental Management System
GHG	Greenhouse Gas(es)
GSCM	Green Supply Chain Management
ISO	International Organization for Standardization
KPI	Key Performance Indicator
SDG	Sustainable Development Goal
SME	Small and Medium-sized Enterprises
TEU	Twenty-foot Equivalent Unit
WTT	Well-To-Tank
WTW	Well-To-Wheels

Contents

List of Figures

List of Tables

1
Introduction

Did you hear that we were contacted by Patagonia?

No?

It was quite funny. Companies are regularly contacting us asking for collaborations and discounts on our products. Patagonia did that as well since many of their employees use our products. I said sure, and asked for a discount on Patagonia's products in return. That is how we work with other companies like POC. They replied with "No we can't do that because you don't have any environmental certifications".

- **CEO** at case company

1.1 Background

As concerns about climate change develops, businesses are faced with an increased pressure to reduce their environmental footprint (World Economic Forum). This has resulted in the increased popularity for company's to incorporate environmental strategies into their businesses. The emerging sustainability trend also affects Small and Medium-sized Enterprises (SMEs), which play a significant role in the global economy. They are often considered the engine of sustainable development through their contributions of innovation and competition to the market (Prasanna et al., 2019). However, in some countries SMEs represent 98 per cent of businesses and can be attributed 60 per cent of global CO2 emissions (Parker et al., 2009). Despite this, only 26 per cent of SMEs have a structured way of mitigating their environmental impact (Walker et al., 2008). Consequentially, there is an urgent need to empower SMEs to adopt strategic environmental practices.

The study has been conducted together with a Swedish SME within the sports nutrition industry. Since the establishment in 2016, the company has quickly made a name for themselves with their disruptive marketing, groundbreaking products, and partnership with some of the worlds greatest athletes and events. As the company matures, they are preparing to incorporate sustainability into their organisation.

1.2 Aim

The aim of the study was to investigate the environmental activities of an SME within the sports nutrition industry to assist in identifying a starting point for a strategic and continuous environmental sustainability work. This was achieved by collecting and estimating emission data from supply chain processes and exploring existing literature in the field of sustainable business strategies. To help satisfy the aim of the study, three research questions were formulated:

1. What does a strategic environmental work imply for the organisation?
2. How can a strategic environmental work potentially change the identity of the case company?
3. How can a strategic environmental work contribute to Agenda 2030?

The first research question addressed different strategies and tools that the company could apply to reach sustainability, and potential benefits to gain. The second research question investigated how a more environmentally oriented strategic agenda potentially could affect the company's identity, behaviour, and image. The third and final research question explored which Sustainable Development Goals (SDGs) were most relevant for the case company and how they could contribute to achieve these goals.

1.3 Delimitations

The master thesis did not consider Scope 1 and 2 emissions as they were deemed minuscule compared to the scope 3 emissions. Additionally, the calculations of CO_2

emission did not encompass all processes connected to the company's operations. However, the focus did not lie in comprehensively mapping the CO_2 emissions, but to offer them an indication of their performance to facilitate a strategic environmental work.

2

Environmental transition for SME

This chapter will give an introduction to relevant topics to understand what the case company needed to have in mind when initiating their strategic environmental work. It will explore areas of sustainable strategic management, stakeholder theory, sustainability tools, SME characteristics, sustainable change management, as well as a description of the sports nutrition industry and the case company.

2.1 Strategic and change management for sustainability

This section gives an introduction to what companies need to consider when start working with environmental responsibility on strategic level. It presents external drivers for sustainability, how to incorporate sustainability into strategic management, change management and cultural change.

2.1.1 External drivers for sustainability

There are major uncertainties regarding severeness and urgency of climate change and companies lack understanding of the efforts to address the issues (Weinhofer and Hoffmann, 2010). Managers need corporate climate change strategy, which is a collection of goals and plans for mitigating environmental impact. Traditionally, business strategies are driven by economic interest, but companies have started to address environmental issues since it may affect their future profitability and competitive advantage (Kolk and Mulder, 2011). Understanding the drivers for sustainability is vital for the development of corporate climate change strategy (de Abreu, 2018). Galpin and Hebard (2018) present a framework (Figure 2.1) to help management:

1. analyse and evaluate external strategic drivers to shape a firm's strategic approach to sustainability
2. respond to external drivers by incorporating sustainability into a firm's internal strategic management components
3. create alignment among a firm's internal strategic management components
4. clearly communicate a firm's sustainability agenda to various stakeholders

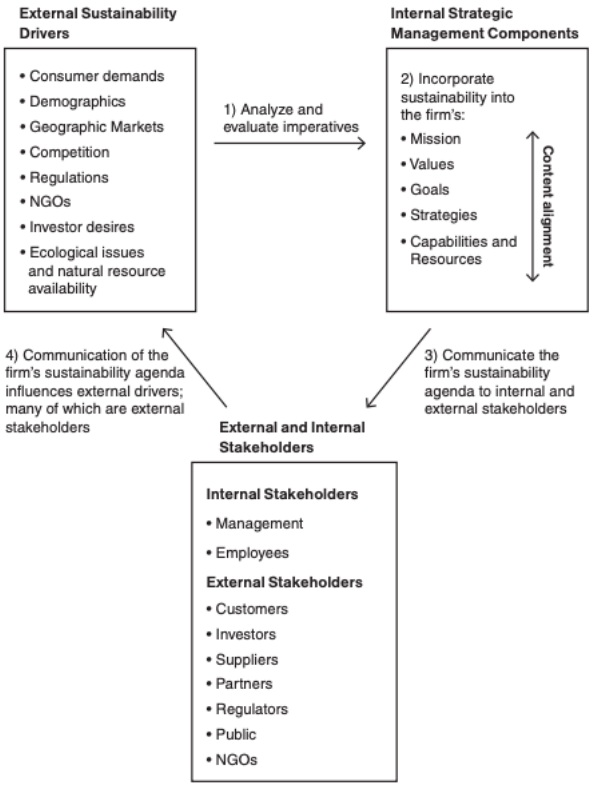

Figure 2.1: Incorporating sustainability into a firm's strategic management. Retrieved from (Galpin and Hebard, 2018).

Studies have shown that companies that implement strategic management tend to outperform companies that don't, as strategic management offers business benefits such as clearer sense of direction for the company, enhanced focus on strategically important aspects, and enhanced comprehension of a dynamically evolving business landscape. Galpin and Hebard (2018) present external drivers for sustainability that should be analysed and whose impact on the firm should be evaluated. External drivers include pressure from stakeholders to pursuing sustainability (de Abreu, 2018). The drivers are customer demands, demographics, geographic markets, competition, regulations, non-governmental organisations (NGOs), investor desires, and ecological issues and natural resource availability.

Each of these external drivers can individually be a valid reasons for a company to integrate sustainability into strategic management, but together they urge the need for an ambitious sustainability agenda (Galpin and Hebard, 2018). A company should analyse these drivers and their implications to prioritise the most effective ones for the company's branding and economic growth.

2.1.2 Steps towards corporate sustainability

The following step is to incorporate sustainability into the firm's internal strategic management components, which are mission, values, goals, strategies, and capabilities and resources. This might in some cases be difficult when managers have

different view points on sustainability, e.g., if they value sustainability differently or prioritise sustainability practices differently. It is necessary for firms to include sustainability in the mission statement to successfully implement sustainability efforts, and incorporating it into the company values has proven positive effects on the perceptions of stakeholders (Agan et al., 2013). However, it is far from sufficient. Sustainability must also be defined in organisational goals to develop a roadmap and metrics for the company to measure progress. Sustainability must also be incorporated into the firm's strategy to successfully provide long-term value to both the company and society, and there is evidence of a strong link between the firm's strategy and sustainability performance (Galpin and Hebard, 2018).

Differentiating a company from its competitors often relies on strategic capabilities, which involve a deliberate arrangement of activities (Galpin and Hebard, 2018). Example of these activities are the company's supply chain design, product development process, or manufacturing methods. With sustainability incorporated into the company's strategic management components, the agenda should be communicated to external drivers. Finally, the company must continuously be aware of the evolution of external sustainability drivers and adapt their strategies accordingly.

2.1.3 Change management and the environment

Change is an unavoidable phenomenon occurring everywhere, all the time, whether it is organisational change, industry change, or environmental change (Cameron and Green, 2019). The process of change is thoroughly studied and there are several models guiding organisation through the change to successfully reach their desired target. One widely adopted model is Kotter's eight step model (Kotter, 2012), described below.

1. Establish a sense of urgency. Discussing today's competitive realities, looking at potential future scenarios. Increasing the 'felt-need' for change.
2. Form a powerful guiding coalition. Assembling a powerful group of people who can work well together.
3. Create a vision. Building a vision to guide the change effort together with strategies for achieving this.
4. Communicate the vision. Kotter emphasises the need to communicate at least 10 times the amount you expect to have to communicate. The vision and accompanying strategies and new behaviours need to be communicated in a variety of different ways. The guiding coalition should be the first to role model new behaviours.
5. Empower others to act on the vision. This step includes getting rid of obstacles to change such as unhelpful structures or systems. Allow people to experiment.
6. Plan for and create short-term wins. Look for and advertise short-term visible improvements. Plan these in and reward people publicly for improvements.
7. Consolidate improvements and produce still more change. Promote and reward those able to promote and work towards the vision. Energise the process of change with new projects, resources, and change agents.

8. Institutionalise new approaches. Ensure that everyone understands that the new behaviours lead to corporate success.

In the process of environmental change there are two types of barriers, *industry barriers* and *organisational barriers* (Post and Altma, 1994). Industry barriers are obstacles or challenges that exist in a specific industry and can affect a company's operations, competition, and growth. Typical industry barriers presented by Post and Altma (1994) are technical information, capital costs, configuration of current operations, competitive pressures, and industry regulations. Organisational barriers, refers to challenges within a company's internal structure, culture, or operations that hinder its capability to adapt to changes. Typical organisational barriers are employee attitude, poor communication, past practice, and inadequate top management leadership (Post and Altma, 1994).

Through a series of best practice case studies, Post and Altman (1992) analysed environmental issues as performance challenges similar to quality management or other transformational changes in companies. Their findings concluded that companies undergo a development process of response to environmental factors, which involved organisational learning and external responsiveness. As a result, the authors developed a model for transformational change, *The corporate greening model*, which consists of three phases of organisational change and learning (Post and Altman, 1992). During the first phase, *Adjustment*, companies respond to external pressures of environmental behaviour by incrementally adjusting current practices in accordance with regulations or market requirements. Appropriate leadership is crucial for committing the company to meet compliance requirements, and exceed incremental adjustments. Phase 2, *Adaptation and anticipation*, is when environmental values become integrated with corporate values. In this phase, an important factor in adopting sustainable management practices is the presence of an environmental leader or change agent, often called environmental champion (Taylor et al., 2012). Technically and administratively savvy environmental employees are essential for establishing structures and systems that reinforce environmental objectives. Allocating resources to an environmental champion could fill the knowledge gap causing companies to avoid addressing environmental issues (Post and Altman, 1992). In the third and final phase, *Innovation*, companies undertake a thorough reassessment of their environmental goals and successfully institutionalise these goals in all of their operations. Even for the most environmentally committed companies, reaching this level of integration typically requires a significant amount of time.

The findings of this study emphasise the importance of acknowledging that environmental challenges involve the need to manage complex organisational change (Post and Altma, 1994). Establishing an environmentally conscious company relies on the presence of important organisational elements, such as structures, processes, and capabilities. These elements support the company's transition from mere adjustments to extensive sustainable change.

2.1.4 Organisational culture and change

Alvesson (2012) describes organisational culture as being 'as significant and complex as it is difficult to understand and use in a thoughtful way'. Leadership plays a crucial role in driving cultural change by championing the need for change, articulating a clear vision, and embodying new behaviours and values (Brown, 1998). Cultural change influence decision-making and adoption of new technologies while fostering a shared sense of identity and purpose among organisational members (Grayson et al., 2018; Schultz and Hatch, 1996). However, cultural change also poses challenges, requiring a systematic approach, strong leadership commitment, effective communication, and active employee involvement for successful implementation and desired outcomes (Schein, 2010). When a strong culture and effective leadership align, companies can successfully connect and synchronise the rest of the organisation to drive the cultural change (Anning-Dorson, 2021). Furthermore, Whitney and Cooperrider (2011) advocate the need for bottom-up change in organisational culture originating from empowering employees to drive cultural transformation. The employees take the role of active change agents which influence and shape culture through grassroot initiatives and collaboration.

2.2 Business models and Supply Chains

This section presents different business models that companies can adopt for sustainability, systems and practices for greening the supply chain as well as an introduction to the characteristics of small and medium-sized enterprises (SME).

2.2.1 Sustainable business models

There are several definitions of what a business model is. However it is generally agreed that a business model serves as a conceptual framework encompassing a collection of entities, ideas, and their interconnections, aiming to express the underlying principles of a company's operations (Osterwalder et al., 2005). The business model describes how a company creates value and captures the return of created value (Shafer et al., 2005). Moreover, business models revolve around the manner in which a company formulates its competitive strategy. It concerns which markets to offer its products or services to, determining its pricing structure, assessing production costs, establishing points of differentiation through a value proposition, and seamlessly integrating its internal value chain with those of other firms within a broader value network. (Rasmussen, 2007).

In recent years, several researchers has begun investigating the concept of sustainable business models (Boons et al., 2013). Bocken et al. (2014) defines value proposition, value creation and delivery, and value capture as the key elements characterising the sustainable business model. The value proposition refers to a company's products or services and how these brings value to different customer segments and strengthen the relationship between seller and buyer. Value creation and delivery refers to how businesses commonly generate value by capitalising on fresh business prospects,

emerging markets, and new revenue generation. Value capture concerns how revenue is captured through services, information to users, provision of goods, new customers or by reducing costs. Sustainable business models encourage firms to not only focus on profit, but also ecological and social values, providing a more holistic approach to business. Moreover, sustainable business models establish a connection between individual businesses and the broader production and consumption system, creating a mutually beneficial outcome for all stakeholders involved (Boons et al., 2013).

Stakeholders are traditionally individuals, groups or entities that posses stake or interests in organisations. The stakeholders are characterised by the legitimacy, urgency, and power they possess which affect and influence business practices (Clarkson, 1995; Freeman et al., 2010). Typical stakeholders are competitors, customers, employees, shareholders, governments, suppliers, investors, and non-governmental organisations (NGOs). However, Stubbs and Cocklin (2008) emphasise the importance of including the environment and society as stakeholders in sustainable business models.

Bocken et al. (2014) have formulated eight different sustainable business model archetypes, five archetypes relevant to this study are presented below (Table 2.1).

	Value proposition	**Value creation and delivery**	**Value capture**
Maximise material and energy efficiency	Products with less resources generate less emissions & waste	Partnerships with various stakeholder. Focus on product and manufacturing innovations.	Reduced cost due to less resources needed. Hence, profits and competitive pricing gained. Smaller ecological footprint
Create value from waste	Transform waste into a resource in other production settings.	Focus on eliminating life cycle waste. Instead, close material loops and partner across industry to enable capture and transfer waste stream	Reusing material will reduce costs and turn waste to a valuable product. Reduced environmental footprint have a positive impact on planet and society.
Adopt a stewardship role	Proactively engage with stakeholder to ensure long-term health and benefits. Being transparent with production and supply chain to consumer entail positive impact	Focus on partners and activities which priorities health and well-being for all stakeholders in the supply-chain. Use third-party certification to facilitate and track practices on large a scale.	Premium pricing and brand value can be gained through stewardship strategies. Healthy workers, customers, and general stakeholder well-being ensure long-term benefits.
Repurpose for society & environment	Prioritise social and environmental rather than maximising profits by engaging with local communities	Create societal and environmental benefits (e.g. gender equality in communities or fauna restoration) through activities, partners and channels. Embrace employee ownership or employ with non-traditional partners.	Meaningful enterprise. Resilience can be attained by supporting stakeholders in growth and downturn.
Develop scale up solutions	Societal and environmental benefits maximised when innovative sustainable solutions are scaled up	Ensure that the sustainable business model can scale. Partner with unusual partners such as government and other business relationships are necessary to scale the business	Generated revenue through variable or fixed fees in scaling. For example: licensing or mergers. Mutual benefits will be achieved.

Table 2.1: Business model archetypes and the corresponding value proposition, creation and delivery, and capture.

By *Maximising material productivity and energy efficiency*, Bocken et al. suggest that companies should aim to create more value with less resources. This archetype shares many similarities with strategies derived from the manufacturing sector and industrial sustainability. For example, lean manufacturing is a common practice to minimise waste by reducing over productions, unnecessary inventory, and material handling (Melton, 2005; Shah and Ward, 2003).

The business model *Create value from waste* aims to minimise environmental impact by transforming process waste into valuable resources, thereby closing material loops

(Bocken et al., 2014). Such practices share many similarities with the concept of circular economy (CE) which focuses on minimising resource waste, energy leakage and emissions (Bocken et al., 2014; Lüdeke-Freund et al., 2019). While there has been an advancement in countries providing successful recycling, CE largest challenge is the lack of developed reverse flows, as historical focus has been on optimising forward flows (Lüdeke-Freund et al., 2019). Therefore, to effectively adopt CE practices, companies need to reevaluate their supply chain and consequently transforming the manner in which they create and deliver value through their business models (Wells and Seitz, 2005; Schenkel et al., 2015).

The business model archetype *Adopt a stewardship role,* is defined as proactively interacting with all stakeholders to ensure sustained health and well-being (Bocken et al., 2014). Third-party certification can ease implementation and monitor practices. The value captured through stewardship business model is brand value and premium pricing potential, as well as increased well-being for both up- and downstream stakeholders. The intangible values connected to the upstream stewardship, e.g. initiatives ensuring fair wages, employee welfare, or bio-diversity protection, typically motivates customers to pay premium prices.

Enterprises driven by a social or environmental mission thrive on the the business model archetype *Repurpose for society & environment.* It emphasises the value proposition in achieving societal and environmental benefits rather than economic profit maximisation (Bocken et al., 2014). Additionally, value capture is gained when a meaningful business is born, for all stakeholder, by the intangible value associated with the sustainable purpose. It also improves the firm's resilience in times of downturn (Bocken et al., 2014).

2.2.2 Greening of the supply chain

An environmental management system (EMS) is the organisational structure, responsibilities, practices, processes, procedures, and resources to establish environmental policies (Zorpas, 2010). EMS requires the organisation to quantify their environmental impact (and the change of impact over time), setting quantifiable goals to mitigate the impact, providing resources and training for employees, systematically auditing the progress to ensure that goals are achieved, make adjustments in accordance with the goals, and undergo management review (Coglianese and Nash, 2001). With the starting point in Deming's continuous improvement model (1986) the EMS is supposed to be deeply implemented in the organisation's business strategy for the environment to be protected effectively (Shireman, 2003). The recognition of EMS as a tool for improving environmental and business performance has increased because of these reasons (Curkovic et al., 2000). Once the EMS is implemented, the organisation can choose to apply for certification to the ISO 14001 standard, which is reviewed by an independent third party auditor (Darnall et al., 2008).

Benefits for organisations adopting EMSs are improved environmental performance and regulatory compliance, enhanced corporate image, increased profits and produc-

tion efficiency, improved customer satisfaction, more efficient communication channels, and acquired knowledge of environmental processes (Stapleton et al., 2001; Darnall et al., 2008; Ferenhof et al., 2014; Walker et al., 2008). However, the boundaries of an EMS are restricted to the internal operations of the organisation (Handfield et al., 2005), and the organisation is not required to evaluate the environmental performance of their supply chain (Darnall et al., 2008). The mitigation of the environmental impact is therefore questionable if EMS adopters do not promote Green Supply Chain Management (GSCM) practices. Organisations may as well implement EMSs with limited effect on their environmental performance, which through certification and communication can, unethically, enhance their corporate reputation and affect the end customers' purchasing decisions.

GSCM includes a set of practices that organisations can apply to assess the environmental impact of their supply chain, setting requirements on environmental quality of the products for their suppliers to achieve, and evaluating cost of waste in e.g., factories (Darnall et al., 2008). GSCM does not only include working with suppliers, but also informing buyers on how to reduce the environmental footprint (Handfield et al., 2005), leading to both direct and indirect environmental impact of a company's product. The direct environmental impacts derive from activities related to waste during product storage, transportation, processing, use or disposal, which involves the company's first tier suppliers. The indirect impact, however, stems from the company's second (or lower) tier suppliers' products, used as input for the first tier suppliers' production (Darnall et al., 2008). This distinction is essential since GSCM only requires the organisation to evaluate the footprint of the first tier suppliers.

Some companies are focusing on their core competencies, e.g., product development and marketing, and rely on their supply chains for other activities, such as production, which might have a more significant carbon footprint (Darnall et al., 2008). Therefore, including lower tier suppliers in sustainability evaluation is important since they, in some cases, are estimated to account for up to 90 per cent of the supply chain's GHG emissions (Plambeck, 2012). According to Darnall et al. (2008) companies are with increasing frequency involving their supply chains to create innovative ideas, reduce costs in product development, or to develop technologies they cannot develop internally. Organisations are likewise consulting their increasingly complex supply chains when aiming to minimise their environmental impact. Negligence to address environmental issues within the supply chain can negatively affect a company's image as consequences originating from irresponsible supplier practices occur (Klassen and Whybark, 1999). According to Gupta and Piero (2003) the automotive industry has reduced their risk of inheriting environmental issues from their suppliers by evaluating the plastic and steel components in its product design life cycle.

It might be complicated, though, for companies to manage the sustainability of their supply chains, due to the characteristics of the lower tier suppliers (M. Tachizawa and Yew Wong, 2014). First, buyers lack information about lower tier suppliers

(Choi and Hong, 2002). Second, since buying companies often represents only a small part of their suppliers' business, they have limited possibility to assert influence over them (Plambeck, 2012). Third, lower tier suppliers are often SMEs located in countries where pressure on environmental and social sustainability is lower (Esty and Winston, 2009). Finally, lower tier suppliers tend to have lower negotiation power over their buyers and can easily be replaced, and therefore have a more unstable relationship with their buyers (Cueto and Romero, 2006).

According to M. Tachizawa and Yew Wong (2014), there are different approaches to manage sustainability within the supply chain. A large, influential company might control their supply chains through a direct approach by providing information, resources, and training for suppliers, while smaller companies with less influence may encourage collaboration and implementation of certification standards within the supply chain. Furthermore, implementing the same standards in the entire supply chain can facilitate the flow of sustainability-related information (M. Tachizawa and Yew Wong, 2014).

Implementation of EMS in combination with GSCM has a more significant effect on a company's environmental sustainability than the two separately (Darnall et al., 2008). By sharing the structured way of working and defining common goals and strategies with the supply chain, more extensive and effective sustainability actions might be achieved. Successful adoption of EMS requires a set of organisational capabilities. The organisation must encourage its employees to work together and share their knowledge of the internal operations (Hart, 2005). Organisation-wide commitment is another key for continuous improvement and knowledge sharing as well as monitoring of resources, constraints, production capabilities, and other processes (Darnall et al., 2008). Another practice that could be useful for mitigating environmental impact is lean production, which encourages companies to minimise input, reducing the use of materials, and, hence, the environmental impact (Darnall and Edwards Jr, 2006). Successful implementation of GSCM helps organisations develop their competencies and requires them to have strong control systems, which can ensure the environmental quality of goods, reduce stock materials and unnecessary production input (Rosenberg and Campbell, 1985).

According to Darnall et al. (2008), companies adopting EMSs are more likely to also adopt GSCM practices, which may suggest that EMS and GSCM complement each other. The authors also propose that EMS adopters have a bigger tendency of improving the environmental performance of their entire supply chain.

2.2.3 Small and medium-sized enterprises (SME)

Small and medium-sized enterprises (SMEs) have several different definitions, but in most European countries, they are companies with no more than 250 employees (Zorpas, 2010). SMEs typically possess simple systems and procedures that offer several advantages over larger organisations. These include increased flexibility, immediate feedback, shorter decision-making chains, better understanding of customer

needs, and quicker response times (Singh et al., 2008). In many countries around the world, SMEs account for more than 98 per cent of all businesses (Walker et al., 2008; Isensee et al., 2020; Parker et al., 2009), and at least 60 per cent of all CO_2 emissions (Parker et al., 2009; Isensee et al., 2020; Ferenhof et al., 2014). An Australian study found that 98 per cent of investigated SMEs rated environmental issues as *very important* or *important*, but still only 61 per cent acknowledged the environmental impact of their business, and only 26 per cent actually had a plan to mitigate their impact (Walker et al., 2008). Few firms have an environmental manager or policy to reduce their environmental impact and time spent on environmental issues is generally limited (Williamson and Lynch-Wood, 2001). SMEs tend to avoid focusing on environmental issues due to limitation of resources and flow of environmental information, the lack of knowledge about the environmental impacts and means of mitigation, high costs in the beginning of implementation, and management 'fire-fighting' (Ferenhof et al., 2014; Parker et al., 2009; Pullen et al., 2009). All these factors make the company reactive, rather than proactive, to environmental regulations and customer demands (Williamson and Lynch-Wood, 2001). Furthermore, SME managers often consider their environmental impact insignificant and therefore do not engage in environmental improvements (Parker et al., 2009). General awareness of environmental issues but low commitment in mitigation actions are other common features for SMEs (Williamson and Lynch-Wood, 2001)

Companies that do address environmental issues however, are driven by different motivations (Zorpas, 2010). The most common motivations are personal view, economic benefits, good business practice, and commitment to reducing environmental impact, followed by altruism, financial health of business, and PR benefits. Pressure from various stakeholders, such as suppliers, employees, customers, and public opinion are less common motivations.

SMEs are considered the engine of sustainable economic development and contribute with innovation and competition to the market (Prasanna et al., 2019; Parker et al., 2009). If they could successfully address environmental issues, e.g., climate change, energy efficiency, and resource and raw material efficiency, they could substantially contribute to achieving the SDGs (Isensee et al., 2020). However, SMEs must improve their environmental performance by integrating sustainability concepts. Such concepts could be the adoption of EMS to establish environmental policies. The policies serve as a formal document that includes the company's commitment to environmental management. SMEs that have adopted environmental policies perceive beneficial impacts on their business operations (Williamson and Lynch-Wood, 2001). Furthermore, while larger multinational companies are better positioned to make impactful sustainable changes, SMEs and start-ups are vital for developing sustainable businesses models (Nerkar and Shane, 2003; Giarratana, 2004). Radical innovations originating from such enterprises, once scalable and proven, will affect the global competitive landscape and change giant business into more sustainable directions. SMEs are therefore naturally adopting the business model *Develop scale-up solutions* (Bocken et al., 2014).

2.3 Tools for greening

This section covers different tools a company could apply to address environmental issues and work with sustainable development. It explains a framework for quantifying carbon footprint and the Sustainable Development Goals.

2.3.1 Greenhouse Gas Protocol

Greenhouse Gas Protocol (GHG Protocol) is a well-recognised and widely used tool for measuring and reporting greenhouse gas emissions (GHG Protocol, n.d.). Developed by the World Resources Institute and the World Business Council for Sustainable Development (WBCSD), the GHG Protocol provides a standardised method for companies to measure and report GHG emissions from e.g., energy consumption, business travels, transportation, and other industrial processes. The method has been widely adopted by companies in various industries to track and reduce their environmental impact. It is also increasingly being used by investors, governments, and other stakeholders for external assessment of companies' environmental performance.

The GHG Protocol defines three different categories of emissions: scope 1, 2, and 3. Scope 1 refers to emissions from the company's own operations, such as burning of fossil fuels and usage of vehicles (US EPA, n.d.a). These emissions can be directly influenced by changes in operations, e.g., fuel switching and implementation of new technologies. Scope 2 emissions are indirect emissions from the generation of purchased electricity, heat, or steam that the company consumes. These emissions are caused by the generating facilities but are likewise accounted for in the GHG inventory of the organisation. Scope 3 emissions are all other indirect emissions which are not controlled by the reporting company (US EPA, n.d.b). It includes emissions from both upstream and downstream activities of the company, e.g., supplier activities, employee commuting, distribution, or waste disposal.

The GHG Protocol can be used by companies to their advantage in several ways. By measuring and reporting emissions using the protocol, companies can gain a better understanding of their environmental impact and identify areas for improvement (NBS, 2022). This can lead to cost savings through the reduction of energy use, waste and water use. Additionally, by demonstrating their commitment to reducing their environmental impact, companies can improve their reputation and build trust with customers, investors, and other stakeholders. Furthermore, measuring and reporting emissions can also help companies to identify and capitalise on opportunities for growth and innovation in the low-carbon economy.

2.3.2 Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) were adopted in 2015 by all member states of the United Nations to provide an agenda for sustainable development (W.H.O., n.d.). The aim of the SDGs was to end poverty and inequality, protect the

planet, and ensure that all people enjoy health, justice, and prosperity. Pursuing all SDGs simultaneously has proven unsuccessful, and therefore it is important for companies to prioritise their resources (Gervais et al., 2021). Goal 12, 13, and 14 were considered to most relevant for the case company in this study.

SDG 12 *Ensure sustainable consumption and production patterns.*
Unsustainable consumption and product patterns is one of the root causes to for example climate change, biodiversity loss, and pollution (UN, 2022a). 30 per cent of all food produced is wasted, of which 13.3 per cent is lost before reaching retail markets and 17 per cent is waste at consumer level. SDG 12.3 concerned cutting food waste to half of today's levels on consumer and retail level. Additionally, SDG 12.5 concerns the rate of recycling and substantially reducing waste generation. Although all stakeholders factor in, government and regulation play a key role in driving sustainable consumption (Schrader and Thøgersen, 2011)

SDG 13 *Take urgent action to combat climate change and its impact.*
Global temperatures are rising due to human activities, mainly through emissions of CO_2 and other GHGs from burning fossil fuels. Global warming has severe consequences for the nature and mankind, e.g., rising sea levels, diminishing coral reefs, droughts, and other natural disasters (UN, 2022b).

SDG 14 *Conserve and sustainably use the oceans, seas and marine resources for sustainable development.*
The ocean, our planet's largest ecosystem, is threatened by plastic pollution, rising temperatures, eutrophication, acidification, and over fishing. During 2021, over 17 million metric tonnes of plastic ended up in the ocean and choking its animals (UN, 2022c). Furthermore, the ocean is absorbing CO_2 emissions, which increases acidification and endangering marine life. SDG 14.1 concerns a significant reduce in marine pollution of e.g., plastic material, from land-based activities.

2.4 The sports nutrition industry and the case company

This section provides an introduction to what sports nutrition is, how the industry looks, and information about the case company with which this study is performed.

2.4.1 The sports nutrition industry

An athlete is an individual who participate in one or several different sport competitions, ranging from strength (e.g. heavy weight lifting), team (e.g. football), or endurance sports (e.g. marathon competitions) (Beck et al., 2015). While there are several contributing factors to an athlete's success, diet is a crucial component. During intense exercise, the cells of an athlete turns nutrients into energy, allowing them to perform over an extensive period of time. Evidence suggest that consumption of macro nutrients, micro nutrients, and fluids during the day have a positive

effect on performance. Before and during exercise, carbohydrate ingestion have been recognised to improve athlete's performance, while additional macro nutrients improves recovery post training (Beck et al., 2015; Jeukendrup, 2014). This has lead to the rising popularity of sports nutrition and supplements. Common product offerings consists of protein powder, electrolyte sport drinks, energy bars and energy gels (Kerksick et al., 2018). The global sports nutrition market was valued at 44.3 billion USD in 2022, expecting to reach a value of 85.7 billion USD by 2030 (Statista, 2023). Recent consumer trends highlights customers awareness in their food choices, and has led to the grow popularity of 'clean label' products. These are characterised by both having few and well-known ingredients, thereby increasing transparency, trust and removing unnecessary additives. While the clean label phenomena is more based on customer perception rather than scientific evidence, customers have a high willingness to pay for products displaying these characteristics (Arenas-Jal et al., 2020). In addition, the increased consumer awareness regarding, health. social and environmental issues are shaping the nutrition industry (Kerksick et al., 2018; Arenas-Jal et al., 2020).

2.4.2 The case company

The company that this project was conducted for was a relatively small, but fast growing, SME within the sports nutrition industry. Their products were considered as the premium choice for many athletes, where the main product categories were energy bays, carbohydrate-based hydrogel and drink mixes allowing endurance athletes to prepare and stay energised during exercise and competition. Although the company was founded relatively recently in 2016, due to its unique product and disruptive marketing, they quickly became one of the most popular on the market and were, at the time of the thesis, working with some of the best endurance athletes in the world. It has been able to finance its endeavours through private equity funds, and are in 2023 expected to have more revenue than costs.

The case company had around 50 employees in Sweden, Germany, the Netherlands, the US, and the UK and has experienced a steady growth for several consecutive years. The company was mainly devoting themselves to product development and marketing, whereas production was outsourced to manufacturing suppliers. There was one main supplier producing two core product categories, gels and drink mixes, located in Denmark. Suppliers of other products were located in other European countries.

Compared to both their suppliers and some competitors, the case company was a relatively small actor in the industry. However, they were assumed to be the innovative leader in the industry, both due to their advanced, science based product development and their proactive and trendy marketing strategies, which showed off in their significant competitiveness and industry reputation.

The case company was distributing to most countries in Europe, the US, and Canada through usage of third-party logistics (3PL) partners. They had warehouses located

in the Netherlands, the US, Canada, and the UK. Via distributors they were also selling to retailers in countries like Australia, New Zealand, South Africa, Spain, France, Greece, Portugal, and Japan. From the production site in Denmark, the products were shipped to the central warehouse in the Netherlands, from where they were distributed to market specific warehouses or directly to the EU-market. Their products were either sold via the web site or specialised retailers. Additionally, they partnered with several sports events and professional sport teams.

Even though the case company was quite small and did not have comprehensive governmental regulations on working with environmental sustainability, they had, according to some employees, always had sustainability in mind when developing products. However, they have lacked expertise and information to make data driven decisions. This thesis was the starting initiative to set environmental sustainability on the business agenda which aimed to facilitate definition of goals and strategies to reduce the carbon footprint.

3
Method

The methods chapter of this thesis aims to provide a clear and detailed description of how the research was conducted. The research strategy for this project was mixed methods, meaning a combination of quantitative and qualitative methods, as it was well suited for addressing the aim of the study and research questions (Hammond and Wellington, 2012). The qualitative data collection methods consisted of interviews, literature reviews, reviewing of company documentation and a workshop. The quantitative data collection methods consisted of reviewing product specifications, carbon footprint calculators, reviewing of 3PL production and transportation reports, and last mile calculations.

3.1 Research scope

To achieve the purpose of the study and answer the research questions, the scope was defined to study how companies, specifically SMEs, work to improve the environmental performance of their supply chains. In this particular case, the company's internal activities had insignificant impact on the carbon footprint of the supply chain, and therefore the focus lied in studying the scope 3 activities, i.e., processes of the entire supply chain which were not managed in-house. The evaluation of relevant activities to study was made by categorising the supply chain's activities in accordance with Greenhouse Gas Protocol (GHG Protocol). The applied categories were 1. Purchased Goods and Services, 4. Upstream Transportation and Distribution, 6. Business Travels, and 9. Downstream Transportation and Distribution (Protocol, 2013). Purchased Goods and Services included the activities of the outsourced production. Upstream Transportation and Distribution included the transportation of products between suppliers' production facilities and the company's warehouses, as well as between warehouses. Downstream Transportation and Distribution included the transportation of products from warehouses to retailers and end consumers, i.e., last mile deliveries.

The selection of GHG Protocol categories was determined after initial consultation with company representatives. This selection was reinforced by exploring relevant literature, supporting that these processes often contribute to a company's carbon footprint. The remaining categories of the GHG Protocol were deemed either less significant or applicable to the case company's operations. The categories were established to enable accurate quantification of emissions and identification of key areas for mitigation efforts in accordance with GHG Protocol (GHG Protocol, n.d.).

3.2 Data collection

In this section, the data collections methods for literature, life cycle data, interviews, and workshop will be described. The life cycle data is divided into four sections in accordance with the GHG Protocol: Purchased Goods and Services, Upstream Transportation and Distribution, Business Travels, and Downstream Transportation and Distribution.

3.2.1 Literature and other written material

The literature review mainly consisted of reviewing scientific articles and extracts from books, but also reviewing of online websites and the company's internal documentation. Articles and books were retrieved from Chalmers library and Google Scholar, as well as from reference lists in reviewed literature. The topics studied by reading articles were Environmental Management Systems, key words: EMS, ISO 14000; Green Supply Chain Management, key words: GSCM, sustainable supply chains, green supply chains; Change Management, key words: change management, Kotter, change agent; the greening process, key words: greening process, sustainable change; Stakeholder Theory, key words stakeholders, stakeholder theory; Business Models, key words: business models, sustainable business models, green business models, circular economy; SMEs, key words: SME, SME environment, SME environment review, SME sustainability, SME sustainability review, SME culture, SME EMS; and Organisational Culture and Identity, key words: organisational culture, organisational identity, organisational behaviour. When studying areas such as GHG Protocol, Sustainable Development Goals (SDGs) by the UN, and the sports nutrition industry, online web pages were reviewed, e.g., the GHG Protocol's guidelines for measuring a company's carbon footprint and UN's website for SDGs as well as websites of companies in the industry. To review internal company documentation, the researchers were given access to the company's Microsoft Sharepoint, where all documentation of e.g., production, logistics, and product development was found.

3.2.2 Inventory of life cycle data

To quantify the company's emissions, a life cycle perspective of the products has been applied, including production of the products, transportation and last mile deliveries. The Greenhouse Gas Protocol's Technical Guidance for Calculating Scope 3 Emissions was used to categorise the case company's different activities. According to the guidelines, scope 3 required the categories Purchased Goods and Services, Upstream Transportation and Distribution, Business Travels, and Downstream Transportation and Distribution.

Purchased Goods and Services
The company's suppliers were contacted for provision of data regarding production and its environmental impact. In some cases, the suppliers were not able to provide reports with desired data. However, the biggest supplier provided a report from 2021 including the production amount and emissions from the gel and drink mix

product categories.

Upstream Transportation and Distribution
The emission calculator by EcoTransIT World was used for estimating carbon footprint of the case company's transports between production facilities and warehouses. The calculation tool was the most widely used digital tool for calculating freight emissions and was compliant with ISO 14000, and GHG Protocol (EcoTransIT-World, 2023). The 3PLs (third-party logistics, i.e., external logistics companies) were contacted for emission data, but only the 3PL managing air freights were able to provide an environmental report for 2022. The data in this report were created with the emission calculator by EcoTransIT World as well. For the remaining transports, the emission calculator was used manually to estimate the total footprint. To calculate the emissions, the following input data were required: weight of transported goods, transportation routes, mode of transports, and other more detailed parameters, e.g., load factor, speed reduction, and fuel type. Information about weight of goods, routes, and mode of transports were collected from internal company documentation, received from their Microsoft Sharepoint. Load factor was estimated by the researchers, the speed reduction was weighted according to recommendations from the EcoTransIT World's guidelines, and fuel type was applied after consultation with the 3PL. In most situations it was possible to find the correct input data, but in some cases, the input was based on average data from previous calculations.

Business Travels
Emissions data from the business travels were provided from the company's internal management platform TravelPerk.

Downstream Transportation and Distribution
The last mile calculations were conducted for the US and EU market and the calculations were based on guidelines from GHG Protocol. The function required the following input data: distance between warehouse and destination of delivery, weight of goods, and vehicle specific emission factor. The number of deliveries, locations, and weight of goods were received from the company's internal warehouse management inventory system, whereas distances and emission factors were collected from Google Maps and the UK Department for Business, Energy, and Industrial Strategy (BEIS) respectively. The calculations were simplified by aggregating the delivery destinations to fewer destinations close by. For instance, the deliveries in the US and EU were aggregated for each state's and country's capital respectively, and the distances were measured from the warehouse to each capital. France, Greece, Spain, and Portugal were excluded from the calculations since those markets were managed by distributors. According to the 3PL, only for the states of Hawaii and Alaska and the countries Cyprus and Malta, were the deliveries made via air. The remaining deliveries were made via road transports.

To perform these calculations, a set of simplifications were necessary to make. Only customers purchasing through the company's online shop or retailer purchasing

through the company's retailer hub were included. Deliveries to event organisers, distributors, and sponsored sports teams were thereby excluded. Additionally, the emission factors derived from external sources, and were not an exact representation of the emissions. Finally, the distances for each delivery were simplified by aggregating the deliveries to the capitals of each state and country. Therefore, these calculations were not comprehensive, but could nonetheless be useful for understanding of the company's carbon footprint.

3.2.3 Interviews

The purpose of the interviews was to investigate the perception and knowledge of environmental work among the employees. It also laid the foundation for the workshop where the management team and one member of the board discussed the purpose of the environmental work, as well as for determining a suitable starting point for their strategic environmental work. The interviews included 30 employees of the company and two members of the board. The aim was to interview every employee and all members of the board, but due to time limitations, this was not possible. The selection of interviewees was based on purposive sampling and snowball sampling. Purposive sampling was selection of participants based on their experiences and characteristics and snowball sampling referred to when interviewees recommend another person to the interviewers (Robinson, 2014).

People from several countries and all functions of the company and were represented in the interviews. Each interview lasted between 20 and 60 min, depending on the comprehensiveness of the given answers, whether follow-up questions were relevant or not, and on the personality of the interviewee. Some were able to talk freely of the topic and therefore, the interviews were slightly prolonged. The average length for the interviews, however, was 30 min. The interviews were semi-structured with both standardised questions, role specific questions, and follow-up questions on certain answers. The standardised questions asked to everyone were:

- Why should [company] have an environmental programme?
- What is the most important aspects of an environmental programme?
- What do you think [company] can gain from an environmental programme?
- What outcomes of the workshop would you like to see?
- Should the environmental programme be communicated somehow?

Before the interviews, all interviewees were sent the questions and the purpose of the interviews (appendix A) as well as a letter of consent (appendix B). The interviews were conducted either at the headquarters in Sweden or via Microsoft Teams and were audio recorded, either by phone or the recording function in Microsoft Teams. Both researchers were actively taking notes to complement the recordings with impressions of the interviews.

3.2.4 Workshop Design

The purpose of the workshop was to gather the management team and members of the board to initiate the environmental discussion on strategic level. The workshop included eight people from the company, of which seven were employees and one member of the board. The employees were mainly from the headquarters in Sweden representing logistics, product development, branding, sales, as well as production and procurement, whereas one was from the US sales team. The selection of participants were made by the COO but one participant was invited on behalf of the researchers.

Before the workshop, the participants were sent the purpose of the workshop, the presentation with an agenda and KPIs, and a letter of consent (appendix C). In the letter of consent, the participants gave approval for the researchers to anonymously use the information from the discussions in the research. The workshop was conducted in a hybrid format since one participant was located in the US and could therefore only participate via Microsoft Teams.

The workshop was divided into three sessions, each session lasted for approximately one hour. A presentation was initially performed by the researchers to inform the participants about certain KPIs, which laid the foundation for the discussions. The KPIs regarded emission calculations for production, transportation, and business travels, as well as waste in warehouses and interview findings. The participants were divided into two smaller groups with alternating constellation between the sessions (Table 3.1). By the end of session 1 and 2, the two groups met and presented their discussions. The researchers joined one group each as facilitators to take notes of the conclusions and impressions, as well as to facilitate the discussions and clarify questions.

	Group A	**Group B**	**Purpose**	**Execution**
Session 1	CEO, Board Member, Product Development, and, Production & Procurement	Logistics, Brand, and, COO	Discuss purpose of environmental work	Group discussions & groups presents discussion
Session 2	CEO, COO, Brand, and, Production & Procurement	Board member, US Sales, Logistics, and, Product Development	Focus areas, Goals, KPIs, and capabilities	Group discussions & groups presents discussion
Session 3	Everyone		Create a roadmap	Both groups discuss together

Table 3.1: A table describing the design of the workshop. It illustrates the group participants, purpose, and execution of the three sessions.

3.3 Data management

The purpose of this section is to explain how the collected data were managed and transformed into results e.g., as input data to EcoTransIT World's emission calculator.

3.3.1 Scope 3 modelling

This section describes the methods of calculating the scope 3 emissions (Table 3.2) and the input parameters used for calculating the Upstream Transportation and Distribution emissions with EcoTransIT World's emission calculator (Table 3.3). The emissions from air transports were provided by the third party logistics provider (3PL), including information about weight of freight, number of shipments, and total emissions for all transports from Europe to the US and Canada during 2022.

Category	**Tool**	**Source**	**Method**
Purchased Goods and Services	Production report for 2021	Supplier	Estimated production emissions of 2022 by adding 21% to 2021 emissions
Upstream Transportation and Distribution	EcoTransIT World	Road/sea/rail: Researchers' calculations Air: Supplier	Summarised emissions per route and mode of transport in Excel
Business Travels	TravelPerk	Case company	
Downstream Transportation and Distribution	GHG Protocol guidelines	Researchers' calculations	See equation below.

Table 3.2: This table describes the tools and methods used for modelling the scope 3 emissions as well as the source of the results.

To calculate the Downstream Transportation and Distribution emissions, the following equation was used.

Emissions for all transports per destination [kg CO_2] = Distance to destination [km] x Total weight of goods [kg] x Emission factor [kg CO_2/kg-km]

Total weight of goods was calculated by multiplying average weight of goods for the destination by the number of shipments to destination. To simplify the calculations, the deliveries were aggregated to the capital of each US state and EU country respectively.

Mode of transport	**Input parameter**	**Parameter value**
Road	Vehicle type	Weight of freight <15 tonnes: 20 - 26 tonnes Weight of freight >15 tonnes: 26 - 40 tonnes
	Fuel type	Diesel
	Emission standard	EU & UK: Euro 6 US: Euro 5
Rail	Vehicle type	Container train
	Fuel type	Diesel
	Emission standard	EU UIC 2
Sea	Ship class	Container aggr.
	Ship type	CC Transatlantic trade (2 - 4.7k TEU)
	Speed reduction	33 %

Table 3.3: This table describes the input parameters used for calculating Upstream Transportation and Distribution emissions with EcoTransIT World's emission calculator.

3.3.2 Interviews

After the interviews, the recordings were reviewed and the most informative parts of the interviews were transcribed with timestamps to facilitate the reviewing of the transcription. The interview results were categorised by interesting topics and the data from the transcriptions were allocated to each topic respectively. The comparison of different opinions on each topic lay the foundation for the investigation of the company's perception and knowledge about environmental work.

3.3.3 Workshop

The vision, goals, and the roadmap provided insight into the company's ambition with the environmental work. During the discussions, the two groups were taking notes on papers provided by the researchers, including the addressed questions. Additionally, a survey was used to collect participants feedback and takeaways from the workshop. These data sources, together with the researchers' own notes, were sorted to each session's topics. The findings from the workshop were then taken in consideration when identifying possible starting points for the environmental work.

3.4 Analysis strategy

The research questions were formulated for the analysis to centre around and to, in a structured way, understand the results and study relevant theories. The first research question was:

What does a strategic environmental work imply for the organisation?

which was the guide for analysing how the case company could work strategically with environmental issues in a global supply and with multiple stakeholders. Investigated research areas were sustainable strategies and business models, environmental management systems, green supply chain management, stakeholder theory, and methods for measuring carbon footprint with Greenhouse Gas Protocol. The second question was

How can a strategic environmental work potentially change the identity of the case company?

and investigated how the company's organisational identity, behaviour, and reputation in the industry might change by transitioning to sustainable business. The research question also examined how the company's environmental work aligned with its current mission statement and values. Furthermore, whether employees view green initiatives as a central part of the company's identity or an alien initiative that did not integrate with company culture was explored. The top management commitment to the environmental work and its impact was also considered. The third and final research question was

How can a strategic environmental work contribute to Agenda 2030?

which concerned how the outcomes of the discussions around RQ 1 and 2 could contribute in achieving the Sustainable Development Goals (SDG) of Agenda 2030.

4
Results

In this chapter, the results of the study is be presented. The study contains both quantitative and qualitative findings which are categorised into three main sections: Greenhouse Gas Protocol, Interviews, Other quantitative results, and Workshop. The quantitative results were further categorised in accordance to Greenhouse Gas Protocol's scope 3 categories: 1. Purchased Goods and Services, 4. Upstream Transportation and Distribution, 6. Business Travels, and 9. Downstream Transportation and Distribution. However, category 4 and 9 were combined into one section: category 4 & 9. Up- and Downstream Transportation and Distribution. The qualitative findings are presented under 4.2.1 Interviews and 4.3 Workshop.

4.1 Greenhouse Gas Protocol

In this section, the results from estimating emissions in accordance with 'Technical Guidance for Calculating Scope 3 Emissions' will be presented. The results showed that emissions of CO_2e from category 1 Purchased Goods and Services were the highest, followed by category 4 Upstream Transportation and Distribution, and category 6 Business Travels. The least emissions stemmed from category 9, Downstream Transportation and Distribution. The results from category 4 & 9 were merged together into one subsection. The total emissions were summarised below (Table 4.1). The following section will explain the results in more detail. In addition, product waste in warehouses and potential improvement actions were investigated and presented in the end of this section.

Category	**CO_2e emissions [tonnes]**
Purchased goods and services	769
Up- and downstream transportation and distribution	213
Business travels	143
Total	1125

Table 4.1: Total emissions for 2022 broken down to GHG Protocol categories.

4.1.1 Category 1. Purchased Goods and Services

Purchased goods and services was the largest source of CO_2 emissions for the case company. For 2022, the emissions were estimated to be approximately 770 tonnes

of CO_2. Table 4.2 presents the emissions coming from the production of gels and drink mixes. The emissions are divided into scope 1, scope 2, ingredients, the sachets containing the products, and the packaging material of cardboard. What is worth noting is that sugar based ingredients and aluminium sachets account for the majority of the emissions. This information was provided in a report from the producer of the gel and drink mix product categories and the emissions were presented in CO_2 and not CO_2e. Scope 1 and 2 are from the producer's point of view.

	Emissions [tonnes CO_2]
Scope 1	1.17
Scope 2	24.82
Sugar based ingredients	322.96
Aluminium sachets	323.01
Packaging material	96.85
Total	768.81

Table 4.2: Emissions from products divided into scope 1, scope 2, ingredients, sachets, and packaging materials for year 2022.

4.1.2 Category 4 & 9. Up- and Downstream Transportation and Distribution

The carbon footprint from transportation was divided into transportation to warehouses (upstream) and last mile transportation (downstream) in the US and EU markets respectively. Transportation to warehouses refers to the transportation between the production facility and warehouses, or between warehouses. The emissions of each activity are presented below (Table 4.3). The transportation to warehouses represented the majority of the emissions. The emissions are presented in CO_2e.

Activity	**Carbon footprint [tonnes CO_2e]**
Transportation to warehouses	174
Last mile transportation (US)	35
Last mile transportation (EU)	4
Total	213

Table 4.3: Emissions from transportation of products to warehouses and last mile transportation within the US and EU market.

Figure 4.1 illustrates the weight of freight for each combination of transport routes and modes of transport. The mode of transport represents the one used for the majority of the distance for each route. For instance, the combination of US (sea) and CA (air) encompasses not only the sea and air transport from Europe to the United States and Canada, but also involves pre- and post-carriage transfers by truck and train between the warehouses and ports. The largest amount of freight was transported by truck to the primary warehouse in the EU, followed by sea shipping to the United States, truck transport to the United Kingdom, air freight to the United States, and finally shipping by sea and air to Canada.

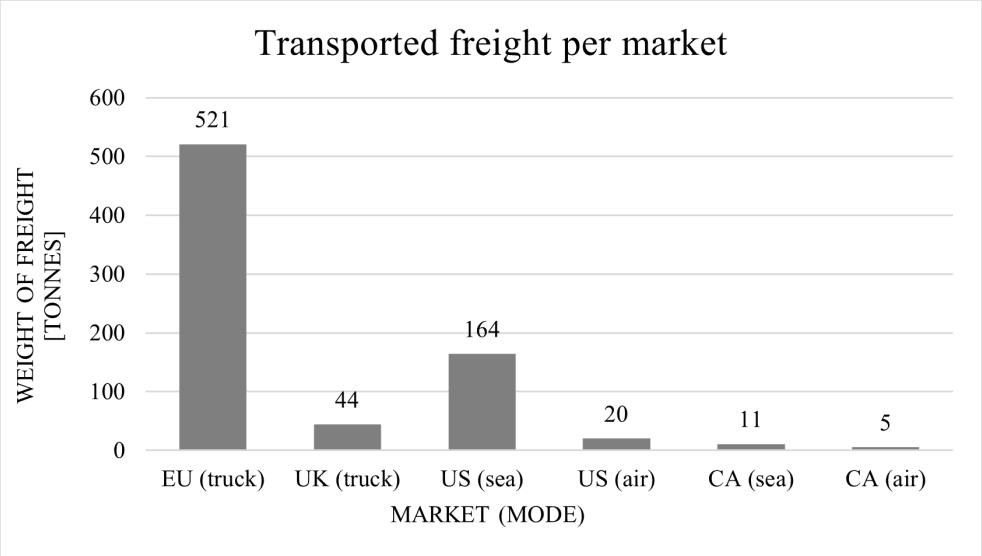

Figure 4.1: Total weight of freight for each transportation route and mode.

Figure 4.2 illustrates the carbon footprint associated with each combination of transport route and modes of transportation. The largest carbon footprint was linked with air freight to the United States, followed by truck transportation to EU warehouse, sea freight to the United States, air freight to Canada, and truck transportation to the United Kingdom. The transport route with the lowest carbon emissions was sea shipping to Canada.

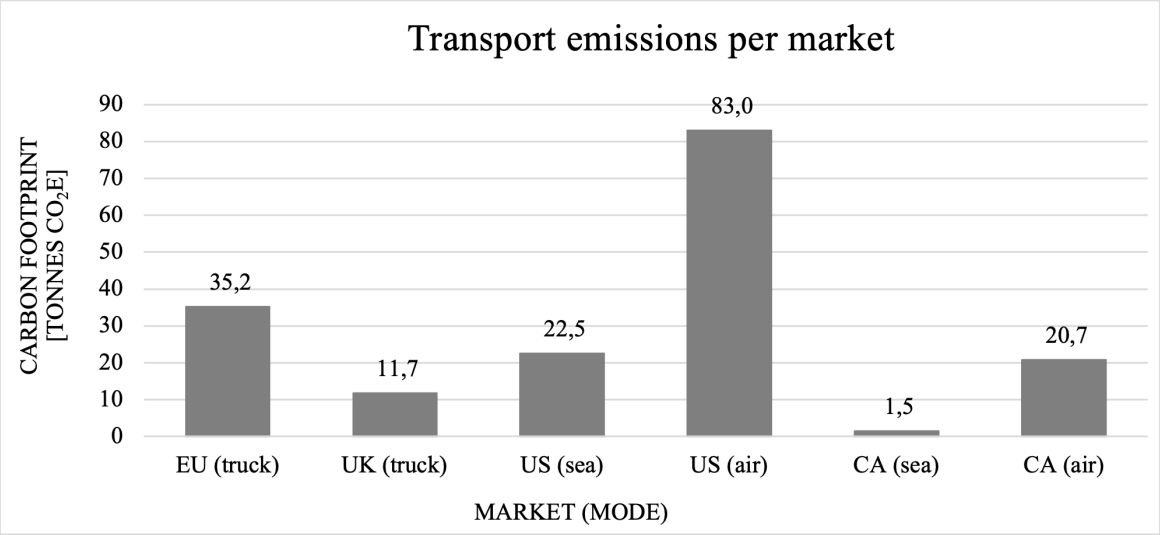

Figure 4.2: Carbon footprint from each transportation route and mode.

The findings indicated that in relation to the weight of goods transported, air freight to the warehouses in the US and Canada generate the highest levels of CO_2e emissions per tonne of goods, 4.15 and 4.14 respectively (Table 4.4). This was followed by truck transportation to the UK warehouse and sea freight to the US and Canada. In contrast, truck transportation to the warehouse in the EU had the least amount of CO_2e emissions relative to the weight of goods transported.

Destination	**Mode of transport**	**CO_2e per tonne of freight [tonnes]**
EU	Truck	0.07
UK	Truck	0.27
US	Sea	0.14
US	Air	4.15
CA	Sea	0.14
CA	Air	4.14

Table 4.4: The table shows the CO_2e emissions relative to the weight of goods transported corresponding to each destination and mode of transport respectively.

4.1.3 Category 6. Business travels

Business travels involved hotel stays and transportation. The main purpose of the business travels were either attending various sports event, business fairs, or for sales purposes. The number of business trips and corresponding emissions are presented below (Table 4.5).

Number of trips	353
Emissions [tonnes CO_2]	143

Table 4.5: Number of business travels during 2022 and corresponding CO_2 emissions.

4.2 Identifying and initiating environmental activities

This section presents the findings derived from interviews conducted with employees and board members of the case company. During the interviews, certain issues in the supply chain were highlighted and based on the GHG Protocol data, the impact of these issues were quantified. Lastly, it presents the effect of involving the entire staff in the project and presenting them the qualitative and quantitative findings.

4.2.1 Interviews

The interviews involved 30 employees from all functions in the company: branding, marketing, operations, R&D, and sales, as well as two members of the board. The majority of the interviewees were excited to pursue environmental improvements, expressing how all companies should take responsibility incorporating environmental practices. The consensus was that stakeholders will need to affect companies to take environmental actions, exhibiting concerns that internal motivation often was not enough. In general, the findings from the interviews correlated with the role of the interviewee. For example, marketing and branding members often discussed communication strategies and partnerships, while sales discussed market opportunities and customer needs. Additionally, members from operations discussed the difficulties of implementing green practices due to limited resources and lack of knowledge. Long time employees generally discussed the case company's prior reasons for not implementing an environmental work, while newer employees expressed confusion or inaction regarding environmental initiatives. Furthermore, there were some discrepancies on how an environmental work should be conducted and utilised by the company. The key findings from the interviews are presented below (Table 4.6). The interviewees expressed certain environmental issues and improvement actions regarding the supply chain. The environmental impact of these activities were quantified and are presented in section 4.2.2 and 4.2.3.

Key finding	Description
Perception of environmental work	
Responsibility / excitement	There was great excitement in working with sustainable development. Employees think all companies should take responsibility towards the environment.
Aligned with being innovative leader	Driving sustainable change in the industry would be in line with their position as the innovative leader.
Reasons for lack of eco-initiatives	
No external pressure	They had not experienced any external pressure from governments or the market to work with sustainable development.
Lack of knowledge	There was a lack of knowledge of how to work with environmental issues.
Lack of resources	There was no time for employees to structure the environmental work.
Opportunities	
Logistical inefficiencies - Cost reduction potential	Product waste in warehouses due to short shelf-life. Cardboard was discarded by retailers who don't sell products in original packaging. Potential to cut down unnecessary air freight.
Expiring products to athletes	Expiring products could be sent to athletes instead of being wasted since the athletes could consume them before expiration date.
Reputation / attractiveness	The improved reputation from mitigating environmental impact could entail a stronger brand, enabling the company to partner with other big players in the industry to sell their products or host sustainable events. It could also enhance employer branding, attracting even more environmental knowledge.
Acquisition	The corporate value could potentially increase, which would be beneficial for a potential acquisition of the company.
Discrepancies	
Market opportunities	Some believe they could increase sales due to environmental initiatives, some don't.
Communication strategy	Some believe consumers should know about environmental initiatives to increase sales. Some believe it should be communicated to many stakeholders, except from consumers, since it would be against their current communication strategies.

Table 4.6: Key findings from the interviews with employees and board members explaining the company's view on environmental work.

4.2.2 Product waste in warehouses

Based on the findings from the GHG Protocol and interviews, emissions allocated to product waste was quantified to 19.6 tonnes of CO_2e. Waste mainly regarded the gel products with short shelf-life, and occurred when the gels were transported by ship. Products were wasted due to long lead times in combination with regulation on freshness level on sales date, i.e., the product must have a minimum of five months between sales date and expiration date . In Table 4.7 below, the amount of product waste and corresponding carbon footprint is presented. The emissions stemmed from the production and transportation of the products, with production related emissions being more significant.

	Production	**Transportation**	**Total**
Emissions [tonnes CO_2e]	18.0	1.6	19.6

Table 4.7: Production and transportation emissions related to products wasted in warehouses. Emissions presented in tonnes of carbon dioxide emissions.

4.2.3 Potential improvement actions

This study provided some possible actions and their respective potential impact that the case company could implement to reduce their carbon footprint based on the findings from the GHG Protocol and interviews (Table 4.8). These changes to operations were considered as low hanging fruits for reducing the environmental impact as each action had been mentioned during the interviews.

Action number 1 referred to that a pallet of gels in bulk boxes of 200 units fits more units than if sent in 12-packs, hence fewer containers must be shipped. Action number 2 referred to the fact that the biggest retailer in the US sold the gels in single units, and therefore discarded a lot of 12-pack cardboard boxes. Sending these products in bulk boxes of 200 units instead of 12-packs would imply producing less cardboard. Action number 3 was an example of increasing the load factor of containers. More specifically, instead of sending containers full of water bottles and containers full of gels, pallets of water bottles could be stacked on top of pallets of gels. Action 4 was the most significant reduction of the carbon footprint and referred to shipping 50 per cent less by air to the US and Canada and using more sea freight instead. Finally, action 5 implied a change of materials in the sachets for some products. The new material contained less aluminium, the function of which was to reduce permeability i.e., allowing less oxygen to enter the package, and hence extending the shelf-life of the product. However, the option to implement this seemed possible without affecting the shelf-life too much for this certain product.

Action	**Consequence**	**Emissions reduction [tonnes CO_2e]**	**Emissions reduction in percentage**
1. Gel in bulk package to the US/CA.	More units per container. Fewer containers shipped.	2.0	0.18 %
2. Gel in bulk package to US retailer.	Less cardboard produced.	2.2	0.20 %
3. Double stack water bottles on gel pallets.	Fewer containers shipped.	0.5	0.05 %
4. 50 % less air freight to the US/CA.	More sea freight.	51	4.5 %
5. Change sachet material.	Less aluminium produced.	38	3.5 %

Table 4.8: This table presents some possible actions to reduce emissions and their potential effect in tonnes of carbon dioxide and percentage of total emissions respectively.

4.2.4 Presentation for the company

During the time of the study, the company had a global conference in Sweden where almost all the employees gathered for presentations, team building, and workshops. The findings from the GHG Protocol, interviews, product waste and potential improvement actions were presented which introduced the company to the project and their environmental performance. A result from the presentation was an increased enthusiasm for sustainability within the company, leading to extensive discussions on the topic immediately afterwards. There was an overall interest among the staff to bring the discussion to strategic level and pursue the work towards sustainability.

4.3 Workshop

The purpose of the workshop was to initiate the environmental discussion on strategic level. Seven employees and one member of the board participated in the workshop. The results will be divided into each session. In session 1 the purpose of the environmental initiative, the potential value creation for different stakeholders, business opportunities, and other benefits were discussed. In session 2, focus areas, long- and short-term goals, KPIs, and required capabilities were discussed. Finally, session 3 focused on the roadmap for the project. The key takeaways from each session are presented below (see Table 4.9

	Group A	Group B	Joint discussions
Session 1	"Requirements" & "Ambition" goals Compliant with regulations Employer branding	Importance of green KPIs Financial and environmental conflicts Greenwashing & transparency	Acknowledging compliance as a "Requirements" Not complying with "Requirements" more harmful than not complying with "Ambition" Be a fast follower
Session 2	Short & Long term goals KPIs Internal education	Follow the most strict local regulations Focus on "Requirements"	Formulating KPI Increase knowledge & competence Appoint resource for green transition
Session 3	Defined roadmap		

Table 4.9: A summary of the discussions from session 1, 2 and 3.

4.3.1 Session 1

In session 1, group A initiated rather floating discussions around the purpose since many widespread ideas were lifted, sometimes a bit off topic. The discussions were however not restricted too much by the researchers since the purpose of the workshop was to initiate these types of discussions rather than actually formulating tangible answers to the questions. The discussions were initially mainly led by the CEO and the board member, but once the other two persons, from product development and production and procurement, more actively took place in the discussions, it was more well-structured and centred around the questions about the purpose. All seemed to believe these questions were urgent to discuss and had in most cases common opinions.

The discussions about the purpose revolved a lot around compliance to upcoming regulations and that requirements should be separated from ambition, in order to prioritise effectively. They expressed the contradiction of not understanding environmental issues while being a science based company. Though, focusing on both being leader of science and environment was agreed to be too comprehensive and they should focus on their core. They also agreed upon the need for environmentally assessing e.g. product development or new suppliers. The most tangible value creation for this initiative was employer branding, i.e., attracting talents to the company. They believed there might be a business opportunity since parts of the sports world were very eco-friendly and that their customers often have high education and good understanding of the environment. Another benefit was the increased goodwill which could enhance the company's brand.

In contrast, group B experienced some difficulty in starting their dialogue. The participants cited the broad scope of the topic as a challenge, but once guided by the researcher, their discussions proceeded smoothly. The group displayed active commitment from all attendees, with participants offering viewpoints on the environmental programme that ranged from role-specific perspectives to more generalised and ethical considerations. Instead of directly discussing the purpose of the environmental initiative, the discussions were slightly more focused on the importance of using KPIs. To quote one participant,

"By checking your weight every day when trying to lose weight, you make more active choices to reach your goals."

The case company could make informed operational and strategic decisions with green KPIs. This could ease situations where conflicts between green and financial decisions occur, and foster innovative solutions. Group B identified employees, shareholders, customers and suppliers as the primary stakeholders to consider. Similar to group A, environmental work was considered attractive for both current and future employees and would likewise increase the company valuation for shareholders. The end consumers would appreciate purchasing products from a company engaged with environmental activities and some retailers would not collaborate if green initiatives were lacking. Suppliers would benefit having a green company in their customer portfolio and could potentially strengthen partnership by sharing mutual green goals. Lastly, communication surrounding the environmental work needed to align with current successful communication strategies. Transparency was considered important to avoid green washing and maintain brand credibility.

During the collaborative part of the session when the both groups joined together, many participants opted to step back and defer to the board member, COO, and CEO for discussion, with remaining attendees occasionally offering their opinions. The debated topic was largely influenced by the discussions held previously by group A. It was concluded that the negative consequences of not being compliant with upcoming regulations would be more significant than the positive consequences of exceeding customers' environmental expectations. Therefore, the need for separating requirements from ambition, i.e., rules and regulations from internal goals, was agreed upon. Moreover, they realised that studying these rules and regulations, and its implications, was an urgent matter. Matters of ambition were also discussed, but the priority was clearly to figure out the requirements before setting more tangible ambitions. However, being a fast follower was considered very important.

4.3.2 Session 2

In the second part of the workshop, the group constellations were alternated, though neither group demonstrated any difficulties in initiating discussions. The new group A stated that the most important area to focus the environmental work was product development, followed by logistics and production. Some short- and long-term ambitions were discussed. In the short-term, being compliant with rules and regulations and finding out what they will entail would be the main focus. In the long-term, the goals were more ambition related. They will aim for using only recyclable packaging materials by 2028, reduce the number of air freights, and setting higher requirements on suppliers. Another proposal was not transporting anything farther than 1,000 km by aeroplane, which would require them to expand the manufacturing to several continents. The discussed KPIs were percentage of recyclable packaging and compliance of regulation. The following discussion required capabilities to reach the goals where knowledge about legal requirements and possible business opportunities in different markets was the most vital one. To compliment these skills, all employees would need education in how their daily operations could contribute to a more sustainable business.

Group B continued discussing the importance of distinguishing requirements from ambition, mostly surrounding new directives from governmental bodies. While initially there were some discussions regarding how resources should be allocated between these distinctions, it was agreed that the requirements should be prioritised. Following the most strict local regulations on a global level could be beneficial in markets where the regulations were looser. For instance, the American participant described that compliance to stricter EU laws could be beneficial in the US market, both from a customer's point of view and preparedness for future regulations.

When joining together for a concluding discussions, they formulated more tangible answers to the questions. Similar to the previous session, the discussion was mainly led by the member of the board, COO, and CEO. The most prioritised focus area was compliance with laws, followed by product development and supply chain, where understanding of environmental implications in product development and making active decisions to reduce the environmental impact was emphasised. The established short- and long-term goals are presented in Table 4.10. Several capabilities and resources were needed to fulfil the set goals and objectives. For example knowledge about legal requirements, understanding of possible business benefits, and an environmental specialist to take responsibility for the green transition. Additionally, internal education was deemed necessary for increasing the understanding and integrating sustainable practices within the daily operations.

Short-term goals	1. Comply with emerging regulations before entering into force 2. Acquire knowledge of sustainable development
Long-term goals	1. 100 % reusable packaging material 2. Maximum 10 % air freight 3. Implement compliance requirements for all suppliers

Table 4.10: Short- and long-term goals established during the workshop.

4.3.3 Session 3

During the third and final session, the workshop participants freely discussed a roadmap for the project (Table 4.11). The CEO, COO, and the member of the board took the major initiatives and led the discussions. The others were not equally engaged in this discussion and seemed to let the CEO, COO, and board member decide on the plan. The participants summarised the conclusions from the previous session with a time perspective. The roadmap was integrated into the business plan for 2023 and was supposed to guide the company in their future work. It started with setting ambition and timeline as well as present to the rest of the board for approval of the sustainability initiative. To continue their environmental work, the recruiting of a sustainability resource (sustainability specialist) would start in Q3. Together with the COO, the sustainability resource should explore the regulatory

requirements and applicable standards. In the end of the year, actions based on requirements would be decided. This roadmap emphasised the commitment from the top-management and was the result of a successful workshop.

	PLAN	**RESPONSIBILITY**
Q2	Set ambition and timeline and present to board for approval	*COO*
	Plan presentation of thesis to management team and potentially board	*COO*
Q3	Include sustainability as an area of actions and goals into the Business Plan 2024	*COO & Management team*
	Start recruitment of Sustainability resource for Q4	*COO & HR*
	Start high level understanding of applicable standards with help of external experts	*COO & Operations*
	Start understanding of possible benefits in each market	*CFO & Finance*
Q4	Workshop internally around communication and offset programmes	*Brand & Communication*
	Deepened understanding of requirements of applicable standards	*COO & Sustainability resource*
	Create internal understanding and education	*COO & Brand*
	Decision on BP24 actions based on requirements as part of board decision in December	*CEO & COO*

Table 4.11: A description of the roadmap for the rest of 2023.

5
Analysis

This chapter contained the analysis of the result deriving the answers to the research questions. The analysis was structured in three sections, each corresponding to one research question. The first research question aimed to showcase the implications of a strategic environmental work for the case company. With the second research question, the potential effect on the organisational identity and culture was analysed. The third and final research question explained how contributions to Agenda 2030 could be achieved through a continuous strategic environmental work.

5.1 RQ 1: What does a strategic environmental work imply for the organisation?

The case company had since its establishment in 2016 focused on developing their product portfolio, capturing market shares, and aimed for profitability. It was a natural approach while growing to become an SME. During the interviews, long-time employees mentioned that reducing the environmental impact did not take prioritisation in the decision making, as everyone were focused on building the brand and expanding the business. Although insufficient resources in early phases forced employees to manage several roles simultaneously, the company had since then grown to a point where new employees were frequently hired and new processes established. Consequentially, the maturing organisation annually revised their business strategy which posed a valuable opportunity to explore the implication of a strategic environmental work.

5.1.1 Analysis of external drivers

The case company emphasised the need for building structures for the environmental initiative, defining goals and developing strategies. It would be a matter for the management and owners to incorporate sustainability as an important aspect of the strategic management components. To successfully implement this approach, they had to understand what environment they were located in by analysing external drivers for sustainability (Galpin and Hebard, 2018). In accordance with Zorpas (2010) view on the low demands on SMEs, the company did not experience any external pressure during the time of the study, but both customer demands and governmental regulations might be significant drivers in the near future. It was therefore important to analyse these drivers and their change of influence over time.

The company should explore the customer demands because it was ambiguous whether it existed or not. It could be valuable in understanding the external pressure or market opportunities for improved environmental performance. Some believed that product performance took major precedence and that sustainability was less important. On the other hand, some believed that although customers did not demand sustainability, they would likely do it in the near future. Conversely, some employees believed that there already was a demand, which was consistent with the view of Kerksick et al. (2018).

Governmental regulations could also be a powerful driver in the near future. Within a few years, the company would likely be included in new directives for reporting environmental sustainability, which was a central discussion during the workshop. The most critical concern to address in the short-term was to investigate the emerging regulations and their implications for the company to be compliant when they entered into force.

Besides potential regulations and possible customer demands, only ecological issues and natural resource availability seemed to oblige the company to pursue environmental improvements. This suggested that there were only little direct obligations to improve the environmental performance.

Pressure from external stakeholders were generally an uncommon motivation for SMEs pursuing improved environmental performance, while personal view, good business practice, and commitment to reducing environmental impact were the most common ones (Zorpas, 2010). Although the case company, as SMEs in general, experience low external pressure for sustainability, it would not be viable to avoid addressing the issue since SMEs account for 60 per cent of global emissions (Parker et al., 2009).

5.1.2 Establishment of goals and strategies

The employees, management, and members of the board recognised of the need to pursue improved environmental performance despite low external pressure, which aligns with Kotter's first step (2012). To do this, the workshop participants established some short- and long-term goals, an important aspect in sustainable strategic management (Galpin and Hebard, 2018). In the short-term, the company should explore requirements of the emerging regulations and acquire knowledge of strategic environmental work by hiring a specialist, forming a guiding coalition (Kotter, 2012). Allocating resources to en environmental specialist could fill the knowledge gap causing the company to avoid addressing environmental issues (Post and Altman, 1992). In the long-term, the air freights should be restricted to maximum 10 per cent of all transports, the packaging should consist of 100 per cent reusable material, and compliance requirements for suppliers should be implemented. To reach these goals, they needed to define visions and strategies and create a structured way to continuously improve their performance, according to the third step in Kotter's model (2012).

One possible strategy to reduce dependency on air freight and facilitate the reusability of packaging material was to start manufacturing their products in the US. During the time of the study, all production was located in Europe while the largest market was the US. This meant a lot of transports across the Atlantic to reach the American customers. These transports represented a significant portion of the company's carbon footprint. If the products could be sourced in the US alongside with the production in Europe, the potential to reduce the carbon footprint would be considerable. It would also facilitate the back flow of packaging material since it would not leave the market.

Sourcing products in the US had the potential to solve two other issues. First, products must be sold five months before expiration date. Therefore, products with short shelf-life, mainly gels, were commonly wasted. Production in the US would mean shorter lead times to the warehouses and reduced risk of obsolescence. Second, the increasing customer demand resulted in more frequent out-of-stock situations in the warehouses. Another production site would facilitate scaling of the business and reduce the lead time to replenish the stocks.

5.1.3 Sustainable business models

Aluminium in the product sachets contributed to a substantial portion of the company's emissions. However, there were potential to reduce the amount of aluminium in sachets for the drink mix product category. When the potential emission reductions were presented to the management team, immediate action was taken to change the material. This quick response to feedback is a typical trait in SMEs (Singh et al., 2008). Optimising fill rate in Atlantic shipments could also entail reduced emissions while also allow for more effective transportation, requiring fewer transports for the same amount of products. Such approach would align with Bocken et al.'s (2014) business model archetype *Maximise material and energy efficiency*.

Furthermore, employees within the sales team expressed concerns of cardboard being thrown away as soon as it reached the retailers and distributors. Combining the expertise within operations and sales functions, packaging could be adapted to suit specific customer needs. This approach to sustainability aligned with some employees' view on environmental work: the importance of being an efficient company. Efficient supply chains capture value in reducing environmental and economic costs, thereby aligning sustainable and financial goals (Bocken et al., 2014).

Products associated with 19.6 tonnes of CO_2e emissions were wasted during 2022. The employees recognised this as a failure, and wished for in the future be able to create value out of these expiring products. By first recognising this issue, the company could proactively create a second life of the products through circular economy practices.

Their sponsored elite athletes consumed a copious amount of sports nutrition dur-

ing exercise so one employee suggested sending them the expiring products. The company could thereby minimise waste and boost athletes performance and relationships simultaneously. In addition, the aluminium sachets themselves had the potential for re-usage and recycling. Implementing a system for collecting sachets at partners' sports events could offer a viable solution for accumulating a large quantity of sachets that would otherwise end up in landfills or be incinerated.

These examples highlight the significance of aligning an environmental framework with customer needs. The company's customers consisted of retailers, distributors, event partners, elite athletes, and amateur athletes, all with different customer needs. Catering to each segment's unique requirements adopting different sustainable business models, such as *Maximise material and energy efficiency* and *Create value from waste*, would require implementation of new operations. Embracing a circular economy approach, the organisation would have to collaborate with external partners, e.g. firms specialised in waste management. In addition, new internal processes together with the third-party logistics (3PL) providers, managing the warehouses, would be required to facilitate successful reversal flows in the supply chain. The company could capture value, enhance customer satisfaction, reduce disposal expenditures, foster collaboration with stakeholders, and create value for the environment.

Moreover, taking action to address product waste would demonstrate the company's commitment to sustainability through responsible environmental stewardship. Bocken et al.'s (2014) business model *Adopting a stewardship role* would align with the perception employees had of the case company. Derived from the workshop, many employees addressed the absurdity of being a premium, innovative, and science based company without having a structured environmental programme. Many organisations in the premium segment differentiate themselves through their environmental work (Bocken et al., 2014). In addition to the intangible value for employees associated environmental work, adopting a stewardship role would impose the case company to increase their responsibility and collaboration with the supply chain.

5.1.4 EMS and GSCM

During the interviews, it was evident that the employees were demanding environmental goals, strategies, and a structured way of working with their environmental performance. All of these demands could be met by implementing an environmental management system (EMS). The EMS would require the organisation to measure their environmental impact, set quantifiable goals, provide training for employees, systematically audit the progress, and make adjustments in accordance with the goals (Coglianese and Nash, 2001). However, since the case company's total environmental footprint came from the operations of their suppliers, an EMS must be combined with green supply chain management (GSCM) practices. The case company should focus on encouraging collaboration and guide suppliers to receive certification standards. It would have positive effects on the flow of environmental

information, facilitating fact based decision making.

The main objective, formulated during the workshop, was to comply with regulations, which was one of the benefits a successfully implemented EMS could provide (Darnall et al., 2008). Other possible benefits for the company to adopting an EMS were enhanced corporate image and increased efficiency, which were common desires from the employees. It could also enable the case company to establish new partnerships with big actors in the industry that only collaborate with environmentally aware companies.

5.2 RQ 2: How can a strategic environmental work potentially change the identity of the case company?

The company viewed itself as the innovative and scientific leader in the industry. Despite being a small company, they partnered with some of the worlds biggest endurance sports events and highest performing elite athletes. The case company established their market position through disruptive marketing, groundbreaking products, and strong brand image. These elements has shaped the firm's core identity and culture, and during the time of the study they were prepared to implement sustainability practices into the organisation. Schein (2010) emphasised the significance of strong leadership and top-management commitment, effective communication, active employee involvement, and a systematic approach in transforming an organisation's culture.

5.2.1 Leadership and Commitment

The management team and representatives from the board displayed commitment to the matter of sustainability e.g., during their participation in the workshop. The importance of having a systematic approach to environmental work was acknowledged and it would require establishment of environmental goals and strategies. Through the roadmap defined during the workshop, the management team created a structured initiation of the environmental work and ways to reach the company's long- and short-term goals. The roadmap was a good commitment to structure and capabilities needed when establishing an environmental company, aligning with Post and Altma (1994) .

The major barriers for the company to implement green practices into the organisation was the lack of capabilities and resources, rather than attitude and will. All employees expressed the need for prioritising sustainability. Employee enthusiasm and management commitment have been drastically influenced by the quantitative findings of this study. For example, during the Q&A of the mid-project presentation, members from different functions immediately discussed how the case company should act with the new insights gained from the green KPIs. Despite a tight presentation schedule, these discussions were prioritised. Additionally, new sachets for

the drink mix containing less aluminium were introduced when the potential environmental improvement was presented. The increased enthusiasm for sustainability was also evident in the increasingly common environmental discussions among the employees. In addition, several employees brought up personal opinions regarding the travel habits and proposed an internal CO_2 budget to facilitate responsible travelling.

Despite the improved employee enthusiasm and leadership commitment, the management emphasised the importance of being a fast follower rather than a first mover towards sustainability. The reason to not proactively lead the change was the limitation of resources and their relatively small environmental impact compared to other businesses. These characteristics were however typical for SMEs (Parker et al., 2009). As the engine for innovation and sustainable development (Prasanna et al., 2019), SMEs should be more proactive and drive the change towards sustainability, rather than being reactive to regulations and customer demands. With respect to the case company's influence in the industry and their current enthusiasm, they would seem a suitable leader of sustainability.

5.2.2 Systematic approach and Communication

In accordance with Brown (1998), the improved enthusiasm from employees and leadership commitment was a positive development of the company's identity towards environmental awareness. However, knowledge about their environmental impact and means for mitigation, and the flow of environmental information within the supply chain were limited. It was evident that current environmental initiatives were quite unstructured and environment-related decisions were not fact-based. Furthermore, many employees did not know about decision-making regarding environmental performance and experienced a sense of inaction. To overcome these issues, the company was planning on employing an environmental specialist to take responsibility for the matter. Such employees are essential for sustainable change (Post and Altman, 1992). Acquisition of knowledge about the environment could enable them to overcome information-related barriers.

With the environmental specialist and operations team leading the implementation of EMS in the supply chain and collaborating with suppliers, the flow of environmental information would be improved and procedures for mitigating impact could be created (Darnall et al., 2008; Post and Altman, 1992). In order to successfully achieve the green change, the environmental specialist need mandate to influence the decision-making and support from e.g., the operations team to develop the supply chain. The acquisition of knowledge and establishment of environmental processes could also have the potential to foster enhanced clarity and transparency in communication, with both internal and external effects. Communicating internally could reduce the current confusion and perception of inaction, which would possibly instil a greater sense of optimism and belief in attainability of goals. Externally, it could reinforce the company's reputation while simultaneously igniting discussions about the environmental impact of the sports world (Darnall et al., 2008). Eventually,

the positive awareness would reach the consumers, leading to the development of an even stronger brand and position as the innovative leader of the industry.

Employees believed that improved environmental commitment would make them a more attractive partner for event organisers and suppliers. Through implementation of an EMS and involvement of the supply chain, the case company could positively influence powerful stakeholder for further environmental commitment. This aligns with Darnall et al.'s (2008) view on the benefits of EMS on GSCM. Furthermore, a reputation of being environmentally responsible would likely enhance the employer branding. Attracting eco-conscious staff could have the positive effect of reinforcing and further develop green initiatives.

Evident from the workshop, the incredible performance of elite athletes using the case company's products has been the key communication strategy of the brand. By letting the athletes, and by extension, the product itself speak for the company, true credibility has been achieved. This approach has been pivotal to the company's identity and core values, from which they should not deviate. The importance of letting others speak for their environmental actions was strongly emphasised by the employees. The external communication should be addressed to the supply chain and partners rather than to customers to align with current strategies.

5.3 RQ 3: How can a strategic environmental work contribute to Agenda 2030?

Many Sustainable Development Goals (SDGs) could be applied for the case company, but for a small company with limited resources and capabilities, focusing on too many SDGs could be difficult. Therefore, the SDGs 12, 13, and 14 were chosen for the analysis of the case company's contribution to Agenda 2030.

5.3.1 SDG 12: Ensure sustainable consumption and production patterns

SDG 12 revolved around unsustainable consumption and production patterns being a root cause for climate change, biodiversity loss, and pollution. An issue in this context was that 30 per cent of all food produced in the world was wasted, of which 13.3 per cent was wasted before reaching the market (UN, 2022a). SDG 12 concerned cutting down food waste to half of the current level, increase the rate of recycling, and reduce waste generation. The case company encountered issues with product waste in warehouses due to some products' short shelf-life. The products discarded in warehouses during 2022 corresponded to production and transportation emissions of nearly 20 tonnes of CO_2 - 2 per cent of the company's total emissions included in the scope of the study.

At the time of the study, there was no strategy for mitigating the waste in warehouses, but several alternatives were discussed. One potential solution was to sell or

donate the expiring products to sponsored athletes, who would consume the products before the expiration date. If this could be implemented, nearly all of the company's product waste could be eliminated. Furthermore, by establishing systems for recollecting sachets and cardboard packages the rate of recycling could be increased and waste generation reduced. Implementation of such practices would contribute to achieving SDG 12.

5.3.2 SDG 13: Take urgent action to combat climate change and its impact

SDG 13 concerned rising global temperatures due to human activities which had severe consequences for the planet and its inhabitants (UN, 2022b). As the case company was selling consumable products on a global level, they contributed to emissions of greenhouse gases from e.g., production and transportation of the products. The case company must involve their suppliers and 3PLs to minimise their joint environmental footprint. This could be done through implementation of EMS throughout the entire supply chain and closely collaborate with suppliers (Darnall et al., 2008).

Since air freights represented a large proportion of the company's emissions, working on solutions to minimise the need for such quick transportation would be another positive contribution to SDG 13. One potential solution was manufacturing the products in the US alongside with the European production, reducing the amount of long-distance transports. Furthermore, if the aluminium in the sachets could be replaced the emissions could be further reduced, thereby contributing to SDG 13.

5.3.3 SDG 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

SDG 14 revolved around oceans being threatened by for example plastic pollution and rising temperatures. Plastic pollution in the oceans stemmed from e.g., human activities on land such as littering of plastic components (UN, 2022c). The case company's products were used in sports events all over the world, where aluminium and plastic based sachets were thrown on the streets. A lot of the sachets were collected in bins, but there was still a risk of sachets ending up in nearby seas and oceans. Working closely with the race organisers to meticulously recollect all sachets and ensure recycling could mitigate the risk of contributing to plastic pollution in the seas and oceans. Rising sea temperatures are affecting ocean wild life and was a consequence of increased amount of GHG in the atmosphere. Reducing the environmental footprint of the company's supply chain would, similarly to SDG 13, contribute to conserve sustainable oceans.

5.3.4 Indirect contributions

At the time of the study, the case company was quite small and believed to have relatively little negative impact on the environment compared to other businesses. Therefore, minimising carbon footprint would unlikely contribute to any significant progress of mitigating climate change, a common perception among SMEs (Parker et al., 2009). Bocken et al. (2014) and Prasanna et al. (2019) emphasise the importance for SMEs to develop sustainable innovation for large enterprises to adopt. The case company was the innovative leader in the industry which many competitors and other stakeholders respected and were influenced by. Implementing means for reducing the environmental footprint of their supply chain could entail more significant contributions if successfully influencing others to pursue improvements. Many employees expressed that all business should try and mitigate their environmental impact, so aiming to influence others seemed like a promising strategy.

6
Discussion

This chapter explores the strengths, weaknesses, and contributions of the thesis to the field. By examining the relevant literature, research method, the thesis's credibility, and the universal applicability of the findings, an understanding of its strengths and weaknesses can be attained. Moreover, the contributions from this study to previous research is discussed in this section, addressing both supporting and contradicting results.

6.1 Strengths and weaknesses

The study has several strengths that contribute to its comprehensiveness. One primary strength was the chosen research methods involving the Greenhouse Gas Protocol (GHG Protocol) calculations, conducting a workshop and interviews with powerful stakeholders such as the CEO, COO, board members, and other employees. This approach allowed internal stakeholders to obtain an understanding of the purpose of the study and enhanced the collection of diverse perspectives. Furthermore, it developed a sense of enthusiasm and a heightened awareness among stakeholders regarding the significance of integrating environmental initiatives. Additionally, research on the subject matter has been conducted, providing a foundation for analysis.

However, there were instances where the researchers had to impose limitations and make assumptions. This was particularly evident in areas such as emission calculations and not involving external stakeholders in the interviews. Albeit improvements in these aspects could potentially enhance the overall comprehensiveness of the study, the researchers considered the trade-offs to be necessary. The findings were deemed sufficient to satisfy the aim of initiating a strategic environmental work.

6.1.1 Literature in the field

The researchers built upon a comprehensive body of literature in the field of environmental management, SMEs and sustainable business practices. By drawing on established theories, frameworks, and empirical studies, a foundation was instituted for the study.

The literature review undertaken provided a nuanced understanding of the subject matter and ensured the relevance and rigour of the analysis. The theories and concepts explored in the literature were deemed relevant for the case company, as they

aimed to understand and develop sustainable practices.

Due to the dynamic characteristics of sustainability, the future relevance of this study and its literary base remained uncertain and should be revisited continuously. The case company must be aware of the change in future research in the field to ensure continuous improvement and adaptation of sustainability practices.

6.1.2 Choice of methods

The research methods employed in this study were chosen to ensure a broad examination of the case company's environmental activities. By combining scope 3 modelling, interviews, and workshops, the researchers aimed to capture diverse perspectives and gather rich data, facilitating the initiation of strategic environmental work of an SME.

The GHG Protocol was chosen due to its global recognition for categorising and measuring emissions. EcoTransIT World, a widely used emission calculation tool based on the GHG protocol, was used to calculate Upstream Transportation and Distribution emissions. It was also used by the case company's global third party logistics providers (3PL), further motivating its credibility. In this study, real-time measurements of CO_2 emissions were not conducted, and the emissions calculations were based on estimations using a combination of internal and external data, in accordance with the GHG Protocol. The calculations provided valuable indications of the company's environmental performance, helping to satisfy the study's aim.

In terms of data collection through interviews, best ethical practices were followed to ensure the integrity of the study. The interviews provided valuable insights of the perceptions and perspectives of employees and board members regarding the case company's environmental work. However, in future research it could be relevant to explore the viewpoints of additional stakeholders such as distributors, retailers, suppliers, elite athletes, and everyday consumers. Their viewpoints could potentially influence the case company's future environmental strategies and enrich the study.

The researchers based the method on the most important literary findings for initiating a strategic environmental work. By developing key performance indicators (KPIs) for emissions, a sense of urgency and tangibility was created which empowered employees to take actions. Although the quantitative estimations in this study were not exact nor covered all product categories, precision was not the primary goal. Instead, the researchers prioritised initiating a strategic environmental work, through tangible KPIs, interviews and workshop, thereby involving internal stakeholders. This approach aimed to create ownership and drive significant change within the organisation by emphasising tangible actions and raising awareness. Furthermore, the researchers' mere presence at the case company have increased the overall enthusiasm for environmental discussions, evident through spontaneous small talks and curiosity around the project.

6.1.3 Limitations and assumptions

Further exploration of scope 1 and 2 emissions was excluded, such as the indirect emissions stemming from the electricity consumption at the company's office. Although these emissions were assumed insignificant compared to the case company's scope 3 emissions, they could still provide valuable insights. It would also be negligent in future environmental work to ignore these since the carbon footprint encompasses all scopes.

Moreover, not all categories in the GHG Protocol Guidelines were considered when estimating the carbon footprint. Employee Commuting and End-of-Life Treatment of Sold Products (category 7 and 12 respectively) seemed especially relevant for the case company. A wider range of investigated environmental categories might have influenced the recommendations. Furthermore, the chosen categories in the GHG Protocol Guidelines were not all encompassing. Category 1: Purchased Goods and Services excluded office material and additional products such as water bottles and energy bars due to lack of supplier data. It was also worth noting that not all transportation-related emissions were included in the calculations. For instance, the emissions associated with transports to distributors or different events were not factored into the analysis under category 6: Downstream Transportation and Distribution.

In conducting the calculations for category 6: Downstream Transportation and Distribution, the distances used in the calculations were not exact measurements between the company's warehouse and customer locations. Instead, distances were approximated to each state in the US and capital in the EU, and then multiplied by the number of shipments to each state or country. The actual deliveries might as well have traversed multiple logistics centres before arriving. Additionally, the reliability of the emission factors could be questioned since they were general estimations and not exact measures. How they were created was uncertain, but nevertheless used and trusted by the researchers. In future research, country specific emission factors could be applied for further precision in calculations. These gaps in the calculations may limit the overall comprehensiveness of the quantitative findings. However, the quantitative study was not meant to be precise, but to give the case company an indication of was it big and small, i.e., relationships between different sources of emissions. The quantitative study has solely focused on CO_2 emissions, but other environmental issues, such as emission of pollution, biodiversity loss, eutrophication, and waste treatment would be relevant for future research.

The limitations and assumptions of the study were a consequence of the time constraint faced by the researchers. They exclusively affected the quantitative GHG Protocol results, and thereby the KPIs. The KPIs were important for the interviews and workshop as they encouraged employees and board members to initiate the environmental work. The limitations and assumptions have influenced the precision of the KPIs, however more exact KPIs would likely not correlate with increased enthusiasm for the environmental work.

6.1.4 Credibility

Throughout the research, the researchers avoided imposing their own viewpoints or biases in interviews and workshop. Instead, focus was on capturing the perspectives of the employees and stakeholders involved. The credibility was further enhanced through the large sample of interviewees, capturing a multitude of viewpoints from different parts of the organisations. These perspectives were used in the workshop to facilitate discussions among management and board members.

The quantitative methods used in the study were based on industry standards, such as the Greenhouse Gas Protocol's Technical guidance for calculating scope 3 emissions and the emission calculator by EcoTransIT World. The third party logistics (3PL) providers of the case company applied the same standards, so the methods for using these standards could be confirmed. The emission report from producer of gels and drink mixes was based on their internal data. It could be relevant in the future to estimate these emissions internally to verify the credibility of the producer's reports. Furthermore, the report provided presented the emissions as CO_2 and not CO_2e which would be the standard following the GHG Protocol. However, this deviation did not affect the overall result of the study.

6.1.5 Universal applications

While the results from the scope 3 modelling, interviews, and workshop were company specific, the theoretical principles, emission calculation methods, and strategies had broader applicability. SMEs often share common characteristics, e.g., resource constraints and sustainability concerns. This made the insights from this research valuable lessons for other organisations, particularly SMEs with similar operations aiming to initiate a strategic environmental work. The strategies discussed could be adapted and implemented by SMEs across various industries to enhance their own environmental performance.

6.2 Contributions from the study

This study has provided some contributions to both the case company and the field of research. The study has broadened the perspectives of the literature with both supporting and contradicting findings.

6.2.1 Contribution to the case company

This study has entailed several contributions to the case company. Their enthusiasm for sustainability was improved and several steps in the right directions have been taken. For example, the change of material for the drink mix sachets, which implied less exploitation of aluminium, and the catalysis of the strategic discussion around the environment. The implementation of environmental KPIs proved an important aspect in driving sustainable change, which was one reason for the change in sachet material. In a bigger context, the study has provided the case company with methods

for calculating carbon footprint and a starting point for their environmental work in general.

6.2.2 New knowledge contributions to the field of research

One significant contribution to the research domain was the exploration of how an SME in the sport nutrition industry can navigate the path towards sustainability. By examining the case company's operations and identity, valuable insights were provided into the practical aspects of implementing sustainability initiatives in SMEs. Furthermore, the research highlighted the importance of green metrics for SMEs when initiating environmental work.

6.2.3 Results contradicting or supporting previous studies

The results from the interviews and workshop chiefly aligned with previous research emphasising the importance of stakeholder engagement in driving environmental change. It confirmed existing notions that SMEs struggles with initiating environmental work due to limited resources and capabilities. However, the study challenged the notion that sustainability practices were more suitable for large corporations and underscored the need for small scale improvements for SMEs.

The literature emphasised the importance of communicating environmental initiatives to all stakeholders, including consumers. The findings of this study underline the need to align environmental communication with existing communication strategies, and therefore excluding consumers.

7
Conclusions

The aim of this thesis was to investigate the environmental activities of an SME within the sports nutrition industry to assist in identifying a starting point for a strategic and continuous environmental work. Environmental activities were investigated with Greenhouse Gas Protocol's Technical guidance for calculating scope 3 emissions. The starting point was to quantify carbon footprint, identify big and small sources of emissions, and implement green KPIs. To continuously and strategically manage an environmental work the company must hire an environmental specialist, continuously monitor their emissions, and continuously start new environmental projects.

RQ1: What does the strategic environmental work imply for the organisation?
In the short-term, the company must establish quantifiable goals and strategies, and investigate emerging environmental regulations to be compliant in the future. Furthermore, the knowledge gap of environmental work must be remedied by employing an environmental specialist. In the long-term, implementation of an EMS within the entire supply chain would help reducing environmental impact and increasing the flow of environment-related information. It would also require the company to continuously calculate their impact and review their operations. Furthermore, a potential manufacturing facility in the US and waste management practices should be considered while scaling the business.

RQ2: How can a strategic environmental work potentially change the identity of the case company?
The strategic environmental work resulted in enhanced employee enthusiasm and leadership commitment towards sustainability. By acquiring new knowledge and implementing an EMS, the sense of confusion and inaction could be replaced by optimism and change. This strategic environmental approach had the potential to reinforce the reputation, improve the employer branding, and attract valuable partnerships. Moreover, the company's strong reputation could provide an opportunity to positively influence larger players in the industry, and generate ripple effects within the sports world. However, it was crucial that environmental communication aligned with the company's existing communication strategy and core values, avoiding any conflict or contradiction.

RQ3: How can a strategic environmental work contribute to Agenda 2030?
By adopting a more circular business model and using 100 per cent reusable packaging material, start manufacturing in the US, and reduce the amount of aluminium in

the sachets, the company could reduce their carbon footprint and improve resource efficiency. Selling or donating expiring products and minimising littering during races could reduce waste and plastic pollution, ensuring sustainable consumption and production patterns as well as conserving marine life. Thereby, the company could contribute to SDG 12, 13, and 14. Through implementation of EMS and involvement of suppliers, the company could influence other companies in contributing to Agenda 2030.

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A

Interview information

Background information

At the end of March/beginning of April, a workshop will be held with various stakeholders in the company [case company]. Before that, we want to investigate what the company's employees think about the whole thing and its role. The interviews will be semi-structured, so we have a few questions that we will ask, but there may be follow-up questions related to your answer. Below you will find the questions we want to ask everyone, as well as the questions we may ask. The idea is to keep the interviews under 30 minutes and to have time to prepare mentally for the questions. You always have the opportunity to refrain from answering and end your participation in the thesis.

Purpose of the interview

- - Investigate employees' views and vision of [case company] 's future environmental work.
- How/where they think it would be best utilised.

Interview questions

- Why should [case company] have an environmental programme?
- What do you think [case company] would gain from an environmental programme?
- What do you think is the most important aspect of environmental management?
- Would environmental work affect your role at [case company]?

Possible follow-up questions

- What do you think would be a good outcome from a workshop that raises the issue? "Why should [case company] have an environmental programme?"
-
- What do you think is needed for a successful environmental work?
- What impact do you think environmental work could have on the brand?environmental work?
- How do you see [case company] role in this industry?
- How would [case company]'s role have changed if you had an environmental perspective?

B

Consent for participation in Master's thesis interviews

The master's thesis "Evaluation and development of green operations of a Swedish scale-up company within the sports nutrition industry." is a project at the division for Environmental Systems Analysis at Chalmers university of technology. The purpose of the study is to map parts of [case company]'s CO2-emissions and to investigate the reason why [case company] ought to have an environmental sustainability work.

Parts of the data collection is based on interviews that will be recorded and transcribed. The analysis of the material will focus on the company's employees' reasoning about environmental work at [case company]. The participants' data will be handled anonymously, and the recording will not be disseminated further.

The results of the study will be published in Chalmers' databases and used as a basis for the students' examination.

We appreciate your voluntary participation, but you have the opportunity to drop out of the study at any time. If you have any questions, feel free to contact us. Contact persons for the project are Rasmus Hultén and Adam Pauli, (xxxxx@chalmers.se & xxxxxx@chalmers.se).

I have read and understood the above information and agree to participate in the study.

Signature

Date

Name

C

Consent for participation in Master's thesis workshop

The master's thesis "Evaluation and development of green operations of a Swedish scale-up company within the sports nutrition industry." is a project at the division for Environmental Systems Analysis at Chalmers university of technology. The purpose of the study is to map parts of [case company]'s CO2-emissions and to investigate the reason why [case company] ought to have an environmental sustainability work.

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I have read and understood the above information and agree to participate in the study.

Signature

Date

Name

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