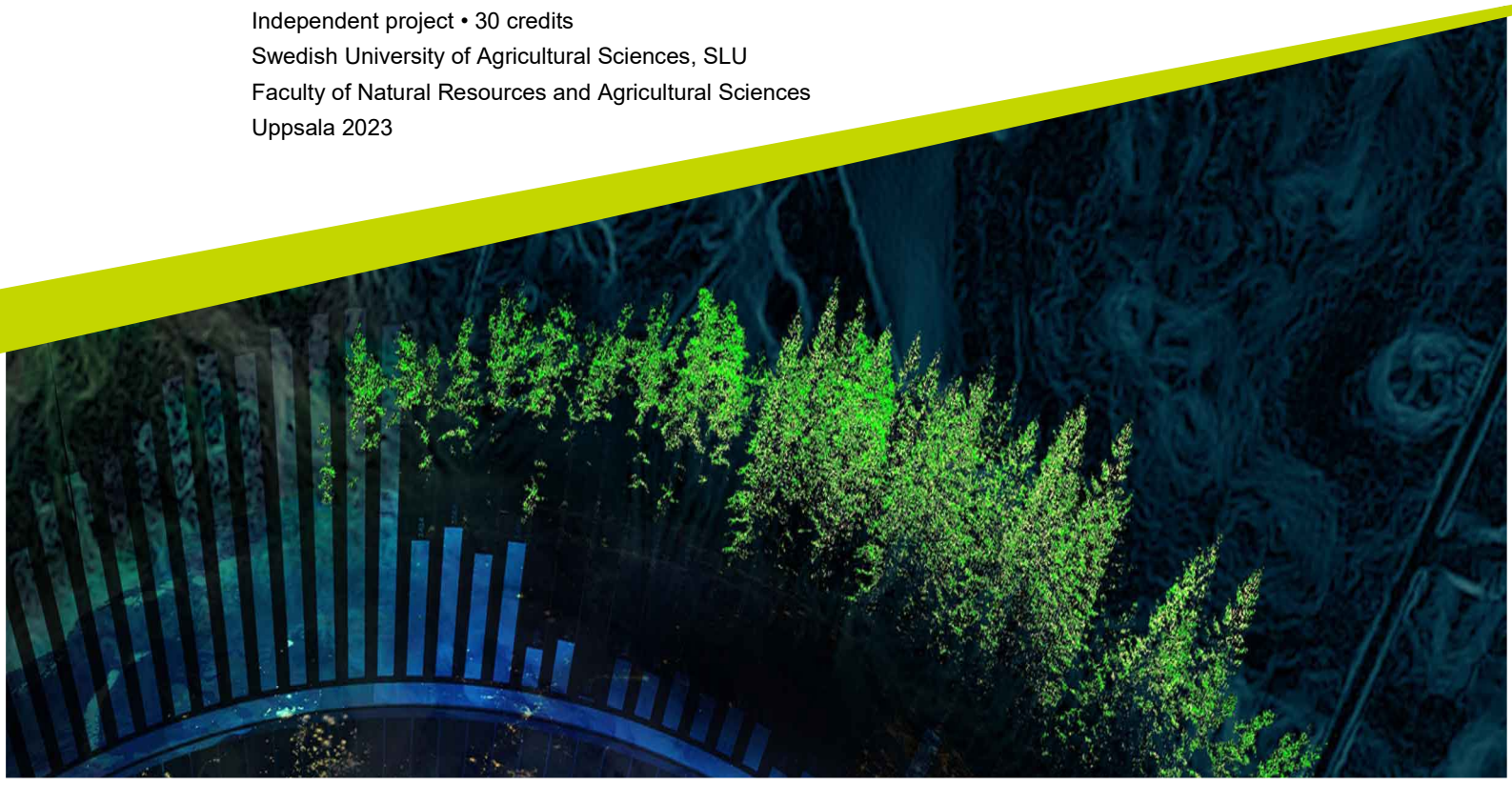




Supplier Engagement for Biodiversity: current situation and views

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Abstract

This research focuses on supplier engagement for biodiversity and how this is currently viewed and utilized by companies. Biodiversity loss is a topic that has long been on the agenda, but only recently in combination with businesses. When it comes to a company's biodiversity impact, research has shown that the largest proportion of impact comes from activities throughout the supply chain and only a small proportion comes from activities from the company itself. Therefore, businesses are starting to focus on supplier engagement to lower their impact throughout the supply chain. Supplier engagement can be seen as a pledge or commitment; it is the level of commitment a supplier has to a company's brand, values, and goals. Suppliers focus their energy and expertise to not just support but drive progress towards a brand's goals. Employees from seven companies that focus on supplier engagement or sustainability were interviewed for this research from different sectors, different sizes, and different locations. The results showed that currently, the interviewees do want to utilize supplier engagement for biodiversity but they struggle with the knowledge gap of how to do this. There are no frameworks or standards available to measure one's biodiversity impact which makes it difficult for companies to choose an area of focus. They are unaware of what are the most important aspects and therefore do not know how to substantially lower their negative impact on biodiversity. Therefore, many companies do not incorporate supplier engagement for biodiversity yet even though the interviewees see this as a key response to biodiversity loss. Moreover, there are some differences between large and small firms in that smaller organizations tend to focus on more informal ways of supplier engagement, looking at good relationships and educating suppliers. Larger organizations often have more rigid structures in place with minimum requirements, guidelines, and rules for their suppliers while also working with them on a more personal level. This can be related to the fact that smaller firms have less power over their supply chain and their impact is smaller. The findings from this thesis simultaneously show reasons to be optimistic and pessimistic when it comes to supplier engagement for biodiversity. The interviewees all realized the importance of supplier engagement for biodiversity but simultaneously the companies have not implemented it yet and are waiting for biodiversity frameworks to help them in mapping their impacts. Therefore, the focus of researchers and policy makers should be on frameworks, assisting smaller firms, and creating awareness surrounding the topic of supplier engagement for biodiversity.

Keywords: Biodiversity, Supply Chain Management, Supplier Engagement, Sustainability, Supply Chain

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1. Introduction

In recent years, the topic of biodiversity loss has become more and more prevalent within the literature, research, and the news. According to WWF (2022) wildlife populations have decreased by 69% on average between 1970 and 2018. The rate at which biodiversity is being harmed and lost is alarming, causing global institutions to start putting this topic on the agenda next to climate change. The Sustainable Development Goals (SDGs) address this issue in SDG 15.

“Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”
– SDG, 2022

In this ambition to tackle biodiversity loss, the private sector plays an important role. Companies are responsible for large parts of biodiversity loss and simultaneously hold many resources and power to halt and reverse negative impacts on biodiversity (Dempsey, 2013; Mace et al., 2018; Smith et al., 2020, WEF, 2019). However, the private sector and companies are often overlooked within global biodiversity debates (UNEP-WCMC, 2019).

Corporate organizations can help address biodiversity loss in several ways. One important one, which this thesis will focus on, is supply chain management and more specifically, supplier engagement. Supplier engagement relates to how committed suppliers are to a certain company’s strategy, values, and goals (Supply Pilot, 2022). This strategy can be the general strategy but also relates to sustainability efforts on social, economic, and environmental aspects. For most companies, their environmental impact extends far beyond their own activities throughout their supply chain and oftentimes the environmental impact of the supply chain is higher than the environmental impact of a company’s own activities (Kashmanian, 2019). Therefore, researchers have argued that focusing on supply chain management and lowering the impact throughout the entire supply chain has the potential to be an important tool for tackling problems surrounding biodiversity loss (Norton, Conlon, & Prepscius, 2019; Kashmanian, 2019).

Even though there seems to be a consensus in the literature on the importance of supplier engagement for biodiversity, research on this topic seems scarce. In general, sustainable supply chain management is a topic that is still relatively new

and therefore quite vague in the literature (Panigrahi, Bahinipati, & Jain, 2019), however, there remains a strong consensus that it is important. Therefore, the need for further research on this topic is necessary to tackle current and future problems through sustainable supply chain management.

Furthermore, the European Union (EU) has been working on a supply chain law that will have a separate focus on biodiversity. This law requires that companies report on the entire supply chain when it comes to sustainability, profitability, and biodiversity (Sfeeri, 2022). Consequently, large companies have to implement supplier engagement for biodiversity in accordance with the law in the upcoming years. This shows how relevant and important this topic is and why there should be more focus on it.

Since not much research has been done when it comes to supplier engagement for biodiversity, this thesis will focus on mapping the current views and strategies of supplier engagement for biodiversity in several businesses across Europe and the United States of America. The thesis does so through in-depth interviews based on an interview guide. The interviewees are employees who focus on sustainability and supplier engagement within their companies. Later, the interviews were analyzed to highlight the most important and relevant information in the findings and discussion. The aim of this thesis is to examine the current forms of, difficulties with, and views on supplier engagement for biodiversity. The two research questions are:

“How are companies currently utilizing supplier engagement for biodiversity and what makes different companies use different strategies?”

“How do the interviewees view supplier engagement for biodiversity and its relevance?”

This research broadens the literature by filling this more general research gap when it comes to supplier engagement for biodiversity. Furthermore, by interviewing people within the organizations and asking for their perspectives on several aspects and difficulties with this concept multiple new views are highlighted. These viewpoints will give new insights into what goes on within the organizations and looks beyond reported impacts on climate and biodiversity.

The thesis research finds that although all interviewees agreed on the importance of supplier engagement for biodiversity, the number of companies already implementing this remains scarce. Reasons for this seem to be the lack of biodiversity frameworks or standards, firm size, and lack of awareness within the firm and in general. This implies that future research and policies should focus on creating a framework or standard that will help organizations map their biodiversity impacts and lower them while simultaneously supporting small firms with the implementation and education surrounding biodiversity impacts and supplier

engagement. Moreover, creating general awareness surrounding the importance of halting and reversing biodiversity loss and the role businesses play in this should be prioritized.

The thesis is structured as follows. First, the theoretical background will be discussed. In this section, the literature surrounding biodiversity loss, supplier engagement and supply chain management, and the combination will be discussed. Second, the theoretical framework will be set out showing how the results will be structured. After this, the methodology will be explained, showing how the data was gathered and how it will be analyzed. This will be followed by the results from the research and later the discussions. Lastly, the thesis will close with a conclusion and suggestions for further research.

2. Theoretical Background

2.1 Biodiversity

“Biodiversity is the variety of life and the interactions between living things at all levels on land, in water and in the sea and air – gene, populations, species and ecosystems.” (Watson, 2022). Where Wilson (2014) states that “Biodiversity as a whole forms a shield protecting each of the species that together compose it, ourselves included.” But nowadays this biodiversity is decreasing rapidly. According to the Living Planet Report by WWF (2022), there has been an average decrease of 69% in wildlife populations between 1970 and 2018. Furthermore, the main reason for biodiversity loss is still land-use change yet might soon become climate change (WWF, 2022).

Several factors will continue to affect biodiversity loss in the near future. One of them is a continuously increasing population. Estimates show that the global population will be 9.7 billion by 2050 and 10.9 billion by 2100 (United Nations, 2019). Furthermore, the trend of urbanization will continue with an estimated 60% of our population living in cities by 2030 (United Nations, 2019). This will lead to cities expanding and impacting habitats further (Kashmanian, 2019) while also creating an increased demand for processed and commercial agricultural products (DeFries et al., 2010). Lastly, not only our population will grow but the middle class will grow significantly, which will lead to a higher level of consumption due to higher standards of living (Kashmanian, 2019).

The World Economic Forum (2018) stated that “Globally, the primary driver of biodiversity loss is the human destruction of habitats including forests—which are home to approximately 80% of the world’s land-based animals, plants, and insects— for farming, mining, infrastructure development and oil and gas production.” Willett et al. (2019) support this by mentioning that “Conversion of natural ecosystems to croplands and pastures is the largest factor causing species to be threatened with extinction.”

Currently, efforts to meet the set goals are still lacking to lower or stagnate the current rate of biodiversity loss (IPBES, 2019; Mace et al., 2018). In comparison to climate change, biodiversity still lacks visibility as an important issue for companies to incorporate into their strategy (McKinsey, 2022). However, the

COVID-19 pandemic created awareness of how fragile and vulnerable we are, showing us how biodiversity plays a key role in maintaining “health, productivity and stability of the many natural systems we and all life on Earth depend on” (WWF, 2022). The WWF Living Planet Report (2022) also suggests that we need to be nature positive by 2030, which means that there should be more biodiversity by 2030 than there is now.

To reach the goals to stop biodiversity loss the private sector is an important actor to get involved since the private sector is responsible for both large proportions of the impact on biodiversity and the capacity to help solve the problem and stop biodiversity loss (Dempsey, 2013; Mace et al., 2018; Smith et al., 2020, WEF, 2019). Furthermore, there should be a large focus on small firms since they contribute to 60-70% of total global pollution (Arnold, 2019; Marshall, 1998; Smith and Kemp, 1998). However, in general, businesses are not mentioned often in the recommendations about these goals surrounding biodiversity (UNEP-WCMC, 2019).

2.2 Supplier engagement

First of all, to define a supply chain we follow Chopra and Meindl (2007) who state that supply chains are “all parties involved in fulfilling a customer order” (Hassini Surti, & Searcy, 2012). Herein, multiple decision-makers are involved when it comes to the resources, processes, and information necessary for this customer order (Hassini, Surti, & Searcy, 2012). For sustainable supply chain management, we use the following definition:

“... sustainable supply chain management as the management of supply chain operations, resources, information, and funds in order to maximize the supply chain profitability while at the same time minimizing the environmental impacts and maximizing the social well-being.”
– Hassini, Surti, & Searcy, 2012

We can thus see that organizations engaging in sustainable supply chain management need to focus on profitability, environmental impact, and social well-being of employees and society simultaneously. Even though this thesis centers around supplier engagement for biodiversity and thus focusses on the environmental aspect, the economic and social aspects will still play an important role in organizations’ decision-making surrounding supplier engagement.

Supply chains can be broken down into tiers based on closeness to the firm or the final product, usually into tier 1, tier 2, and tier 3. The firm that is reporting or in this thesis being interviewed can be referred to as the focal firm and the tiers then relate to the distance from this focal firm, this is visualized in Figure 1. Tier 1 can be seen as the suppliers the firm is in direct contact with, the tier 2 are the suppliers

of materials to the tier 1 suppliers. Lastly, the tier 3 suppliers are usually the furthest removed from the end product and handle the raw materials (Sustain Life, 2021). To make this more clear an example of a clothing company will be explained. The focal firm is the firm that sells the clothes to customers, whereas the tier 1 supplier provides these clothes to the focal firm. The tier 1 suppliers make clothing out of fabrics that they get from the tier 2 suppliers. Further down the line, the tier 2 supplier creates fabric out of the raw materials they receive from the tier 3 supplier. The tier 3 supplier is then responsible for the production of e.g. cotton.

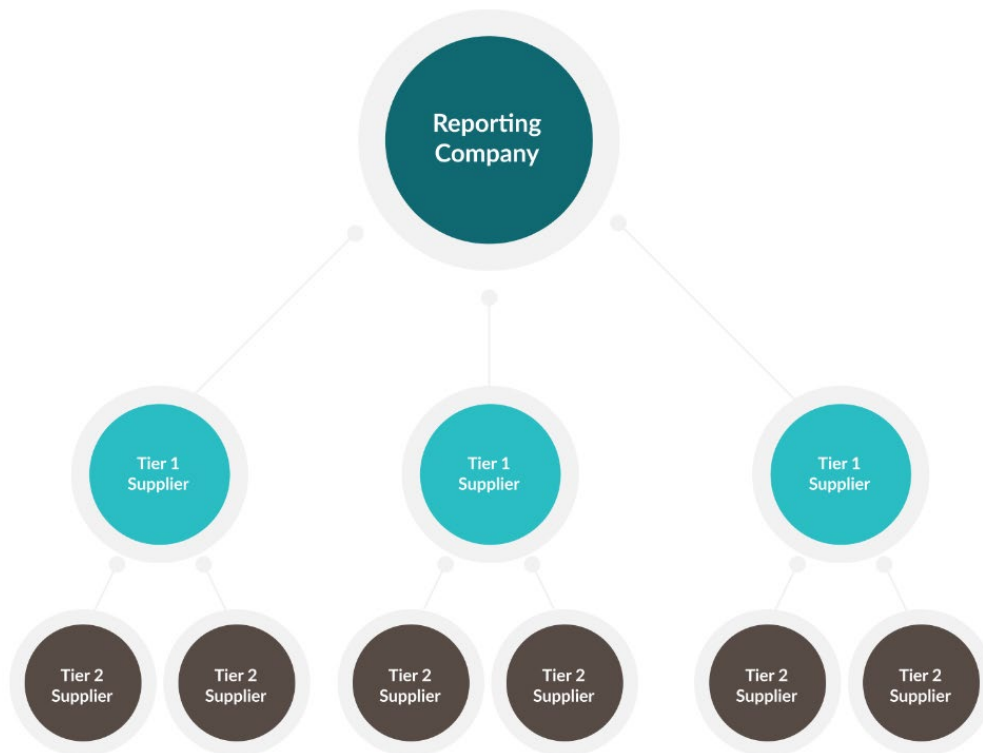


Figure 1. Visualization of supply chain tiers, Sustain Life, 2021

The reason for this explanation of different tiers is that for sustainability management, all these tiers are crucial in order to accomplish supply chain sustainability (Govindan, Shaw, & Majumdar, 2021). Furthermore, Meinschmidt and Schleper (2018) found that human rights and environmental violations tend to happen with tier 2 suppliers or further upstream, meaning closer to the raw materials. Therefore, it is relevant for companies to look throughout their entire supply chain and not only focus on direct suppliers.

To then move on from defining supply chains and sustainable supply chain management to a definition of supplier engagement, Supply Pilot's definition is followed.

The simplest way to define supplier engagement is to think of it as a pledge or commitment; it is the level of commitment a supplier has to your brand, your values, and your goals. Suppliers focus their energy and expertise to not just support but drive progress towards your brand's goals. – Supply Pilot

As Kashmanian (2019) stated companies' environmental impact extends beyond their own activities into the supply chain. Usually, the environmental impact of the supply chain is as great or even greater than the companies' own impact, with the own impact being the impact from the company's own activities excluding the supply chain. E.g. if a company is responsible for the packaging step of a product, their own impact includes all their activities with the packing, but not the production steps that came beforehand. Keeping this in mind, Norton, Conlon, and Prepscius (2019) state that the action points to solve many of our environmental concerns, such as climate change and biodiversity loss, are supply chains. If businesses do care about their environmental impact and their impact on biodiversity, it is likely necessary for them to take their supply chain impact into account (Kashmanian, 2019).

However, if an organization only focuses on its tier 1 suppliers, which are the direct suppliers but does not look further than this, actual impacts on climate, biodiversity, and endangered species are likely ignored and not taken into account (Kashmanian, 2019).

A first step towards supplier engagement is often by developing a supplier code of conduct which includes expectations, requirements, and rules for suppliers which they have to live up to and be accountable for (Kashlanian, 2017, Kashmanian & Moore, 2014; United Nations Global Compact & BSR, 2015). Usually, codes of conduct are created to translate an organization's values and mission into daily actions they desire from suppliers, this code most often contains ethical beliefs and in the case of sustainability, this also entails environmental or social goals they want to achieve with the help of suppliers (Valamis, 2022).

Furthermore, certification can be used to engage suppliers to take action against biodiversity loss. Environmental certification is a voluntary measure where companies can choose to adhere to predefined rules from the certification service. When the company adheres to these rules it will obtain the specific certification showing other companies and consumers their work (Nebel et al., 2005). Businesses can require that their suppliers have certain certifications or choose only suppliers with these certifications (IUCN, 2012). However, for suppliers, this certification often comes with a higher production cost since satisfying the standards linked to

the certification often requires the use of new technologies or materials (van Ravenswaary & Blend, 1997). When it comes to biodiversity, some widespread certifications already exist such as the certification by the rainforest alliance. This certification contains multiple aspects of sustainability yet has a strong focus on forests and biodiversity within them. Examples are that protected areas cannot be used for farming, a plan needs to be developed to conserve natural ecosystems, and fire cannot be used for cleaning fields. The 2020 sustainable agricultural standard also has some supply chain requirements in place at this moment which focuses for example on gender and income equality, traceability, and wastewater management.

Some researchers have argued that installing compliance-based supplier engagement, which entails that suppliers need to comply with a certain set of rules and criteria installed from the focal firm, might lead to low incentives for suppliers and do not sufficiently lead to suppliers changing their mindset (Locke et al., 2007, Locke et al., 2009). However, The United Nations Global Compact's guide for supply chain sustainability does mention formal rules as an important first step toward suppliers being engaged in a more meaningful way (Sisco et al., 2015).

Yawar and Kauppi (2018) showed in their research how the social sustainability of suppliers is influenced by pressure from stakeholders such as consumers, non-governmental organizations, and competing businesses (Hassini et al., 2012). Furthermore, other studies suggest that pressure from governments in the form of policies and regulations can motivate small and medium enterprises to incorporate sustainability into their supply chain (Govindan et al., 2021). However, it is also argued that small firms often do not possess the accurate resources like knowledge, skills, financial resources, etc. to be successful at implementing sustainability initiatives (Aragon-Correa et al., 2008; Wong et al., 2020).

2.3 The business case

The question that can now be asked is: why should businesses care about their impact on biodiversity? An important aspect here is that half of all economic activity in economic terms is moderately or highly dependent on natural capital (World Economic Forum, 2020). Think for example about supermarkets, a large part of their products are food products which can only be generated using natural capital. Furthermore, there are also many risks involved when businesses do not care for their suppliers or biodiversity. The risks of not participating in supplier engagement, in the form of working with suppliers and motivating them to track and lower their impact, include financial losses, reputational risks, regulatory changes, effects on labor, etc. (Kashmanian, 2017, 2018). The risks of not taking biodiversity impact seriously are higher scarcity and costs of raw materials, higher demand for sustainable products compared to unsustainable products, regulatory changes, reputational damage, etc. (IUCN, 2012).

Higher scarcity and costs of raw materials follow directly from biodiversity loss since biodiversity loss will lead to a lower natural capital. This lower natural capital will then translate into less raw materials being available and thus higher scarcity. From an economical viewpoint scarcity leads to higher prices since there is less on offer than there is demand. Therefore, in general, the willingness to pay goes up since fewer materials are available. The higher demand for sustainable products compared to unsustainable products is a trend that has been rising in the past years. As consumers gain awareness about the importance of sustainability, they want to be part of the change towards a more sustainable society and thus look for more sustainable products. In this, the awareness surrounding supply chain sustainability has been rising as well. Regulatory changes form a risk in the sense that not anticipating these regulations can lead an organization to fall behind and have to undergo big changes in a very short time. Lastly, the reputational damage comes forth partly because consumers blame the focal firm of a supply chain for anything negative happening in their supply chain (Hartmann & Moeller, 2014).

The Corporate Sustainability Reporting Directive (CSRD) is an initiative by the European Union that focuses on regulations surrounding reporting on social and environmental risks for businesses. The CSRD will make it obligatory for businesses to assess their impact on biodiversity but also plan to become nature positive by 2050, which is in line with the goals of the EU Biodiversity Strategy for 2030 (Sfeeri, 2022).

There are several reasons for businesses to engage in action that lower their impact on biodiversity. The most important reasons are mentioned in Table 1, however, other reasons can also lead to an increased focus on biodiversity impacts.

Table 1. Reasons to lower biodiversity impact

Reason	Explanation
Environmental Regulation	Need to comply with the law (Dempsey, 2013)
Operational incentives	Improved efficiency through lowering impact on biodiversity (Smith et al., 2019)
Financial Incentives	Lowers supply chain risk connected to biodiversity loss (Smith et al., 2019)
Competitive Advantage	Companies can “distinguish themselves from competitors and win favor with consumers by supporting environmental causes.” (Bishop et al., 2010).

A study by Agyabeng-Mensah et al. (2022) found that external pressure such as from legislation, communities, or civil society organizations had an impact on the decision of small and medium enterprises’ action for protecting biodiversity. However, this is in contrast with the results from previous studies showing that normative pressure does not significantly influence top management and their decisions (Dubey et al., 2019).

Looking back at the differences between small and large firms there are different motivations for them to implement supply chain sustainability. For large firms, the primary motivation is market effectiveness while smaller firms tend to focus more on internal efficiency as a priority (Wong, Wong, & Boon-Itt, 2020).

2.4 Existing biodiversity indicators

2.4.1 Global Reporting Initiative's (GRI) biodiversity indicators

The GRI Standards enable any organization – large or small, private or public – to understand and report on their impacts on the economy, environment and people in a comparable and credible way, thereby increasing transparency on their contribution to sustainable development.
– Global Reporting Initiative

Within these GRI Standards, there is standard GRI 304: Biodiversity 2016. This standard gives all the information any organization might need to start reporting on its biodiversity impact. This standard is divided between four major topics: operational areas close to protected areas or areas with high biodiversity, significant impact of activities on biodiversity, habitats protected or restored, and endangered species in areas of operations.

Even though these indicators show how much effort businesses put into implementing activities that have a minimal biodiversity impact, nothing is indicating whether the business is reaching positive biodiversity outcomes (Boiral & Heras-Saizarbitoria, 2017; Addison, Bull, & Milner-Gulland, 2018). Furthermore, these standards give organizations a clear and consistent way of communicating their biodiversity activities to stakeholders but are not intended to guide internal decision-making processes surrounding biodiversity impacts (Adler et al., 2017; de Silva et al., 2019; Fonseca, McAllister, & Fitzpatrick, 2014).

2.4.2 Science-Based Targets for Nature

Science-Based Targets (SBTi) for climate are already a standard within the corporate world today. The same organization has now been working on developing Science-Based Targets for nature too. These new targets should be released in 2023 and aim at helping companies on prioritizing which areas to invest in when it comes to nature (SBTi, 2023). This process will follow five steps: Assess; Interpret and prioritize; Measure, set & disclose targets; Act (to avoid, reduce, regenerate, restore, and transform); Track. Currently, the draft has been released publicly, and feedback is encouraged to adapt this for the final release. Since this framework is

not on the market yet, there are no sources on how this translates into the real world and how it will impact organizations' engagement surrounding biodiversity impact.

2.4.3 Taskforce on Nature-related Financial Disclosures

“TNFD’s risk management and disclosure framework aims to enable organisations to report and act on evolving nature-related risks.” – TNFD, 2022

Reacting to the need for companies to integrate nature into decision-making, the TNFD was set up to create a framework. Its aim is for companies to be able to assess risks surrounding nature to be able to react to them accordingly. This framework has been developed over the past two years and will become public in September 2023. The taskforce is a “market-led, science-based and government supported initiative” (TNFD, 2023) to tackle biodiversity loss. However, different from the GRI and the SBT for Nature, the taskforce aims to create a framework, not a standard.

“Recognising the need for as much consistency and alignment as possible across corporate reporting jurisdictions, the TNFD is working closely with existing standards bodies as knowledge partners.” – TNFD, 2022

2.4.4 Conclusion

These three examples show that multiple frameworks and standards are currently being developed and adapted to the present needs. However, two of the three examples are not on the market yet, meaning that at this moment there is no one standard yet. (Addison, Bull, & Milner-Gulland, 2018; Lammerant et al., 2019).

Moreover, research has shown that many standards are dependent on the specific context leading to narrow application (Lammerant et al., 2019). This means that some frameworks focus on specific sectors or positions within the value chain and are therefore not applicable in other situations.

In conclusion, it is clear that this remains a complex issue, meaning it is very difficult for businesses to map and adapt their biodiversity impact since there is no one clear measure to use (Boiral, 2016; de Silva et al., 2019; Fonseca et al., 2014; Jones & Solomon, 2013). For companies now, it remains difficult to know which measure to use since it is unclear which one will become globally accepted. Simultaneously, it might not be desirable to have one framework or standard since sectors, supply chains, and impacts vary greatly. However, multiple scholars have mentioned the need for consistent measures and standards businesses can use to map their impact and progress (Addison et al., 2018; Addison, Carbone, & McCormick, 2018). For now, it is unclear how fast these standards will get adopted and generally accepted, therefore, it is currently difficult to say how quickly this field will develop. Since currently organizations are waiting for a standard the

adoption process may be quick, but simultaneously if they want to wait until one standard becomes the generally accepted one, this might take some time.

3. Theoretical Framework

To create a theoretical framework to analyze the results from this research it is important to look at what affects supply chain management for biodiversity. To create a framework based on the literature, the most important concepts will be discussed shortly.

“Biodiversity is the variety of life and the interactions between living things at all levels on land, in water and in the sea and air – gene, populations, species and ecosystems.” (Watson, 2022).

The concept of biodiversity is simultaneously a clear concept and a vague concept. On the one hand, it is easy to understand this definition of biodiversity. We understand what living things are and imagining biodiversity will be possible for most people. On the other hand, there is no agreement between scholars on what is important to measure when it comes to biodiversity and which focus is important. Moreover, understanding the functionality of ecosystems and how destroying them impacts everyone on earth is more difficult to understand compared to having a picture of nature in our minds when thinking of biodiversity.

Furthermore, the definition followed here might not lead to the expected protection strategies for biodiversity. It can be argued that generally speaking, not all species are valued the same. Oftentimes, the most characteristic species are chosen as the focus of conservation strategies (Stohlgren et al., 2008). Therefore, it is important to know how people within organizations view biodiversity since it is very likely to influence the decision-making surrounding supplier engagement for biodiversity.

For supplier engagement here are the three important definitions that were mentioned in the literature above.

Supply chains are “all parties involved in fulfilling a customer order” - Hassini Surti, & Searcy, 2012; Chopra and Meindl, 2007

“... sustainable supply chain management as the management of supply chain operations, resources, information, and funds in order to maximize the supply chain profitability while at the same time minimizing the environmental impacts and maximizing the social well-being.” – Hassini, Surti, & Searcy, 2012

The simplest way to define supplier engagement is to think of it as a pledge or commitment; it is the level of commitment a supplier has to your brand, your values, and your goals. Suppliers focus their energy and expertise to not just support but drive progress towards your brand’s goals. – Supply Pilot

Here it is also important to note that there potentially is a most or more powerful player within the supply chain that affects the level of influence other parties have. If there is one multinational firm that holds high amounts of power it might be difficult for other companies within the supply chain to exert influence on sustainability initiatives.

To implement supplier engagement for biodiversity, various assets of an organization will influence the possible level of supplier engagement. This will be further discussed later in this section.

When these concepts are connected to look at what supplier engagement for biodiversity entails it can be stated that supplier engagement for biodiversity entails the management of the entire supply chain where a commitment is made towards conservation and restoration of biodiversity while simultaneously enhancing profitability. This means that the entire supply chain is working together toward the common goal of increasing profitability while simultaneously decreasing negative impacts on biodiversity. Generally speaking, there is one firm within the supply chain that pushes more for this focus on decreasing biodiversity impacts but it is also possible that multiple companies push for it simultaneously. Ideally, all actors in the supply chain commit to this common goal and adapt their mindsets to achieve this.

As mentioned before, the literature on supplier engagement for biodiversity remains relatively scarce at the moment. Therefore, several existing studies that identify factors influencing sustainability actions were synthesized for this thesis.

Since the aim of this research is to map how companies currently view and utilize supplier engagement for biodiversity it is important to look at what affects these aspects. These effects will be split up into “internal” factors and “external” factors. Several of the factors mentioned have been stated often in general sustainability literature. Since supplier engagement for biodiversity is a specific sustainability action it can be useful to transfer these aspects to see if and how they affect this specific action as well.

When it comes to internal factors the involvement of top management, the resources available, and financial and reputational incentives (Smith et al., 2019). The involvement of top management has often been mentioned in sustainability research as something that drives a company’s sustainability actions and supply chain management (Anderson & Bateman, 2000; Giunipero, Hooker, & Denslow, 2012; Lawrence & Morell, 1995; Winn, 1995). This also links to the company values that result from the top management’s beliefs which influence companies’ involvement in sustainability initiatives (Buckholz, 1991; Giunipero, Hooker, & Denslow, 2012). Resource availability has been mentioned multiple times in the literature review relating to firm size. As mentioned, multiple scholars state that smaller firms often lack resources, in the form of financial resources, knowledge, technical skills, etc., to implement sustainability initiatives such as supply chain

management for biodiversity. Lastly, the financial and reputational incentives have also already been mentioned before as a reason for organizations to engage in sustainability actions (Smith et al., 2019).

Looking at external factors that influence companies' decisions to adopt supplier engagement for biodiversity there is the existing or upcoming legislation, stakeholder pressure, and the existing frameworks to map and measure biodiversity impact. In the general research on sustainability initiatives, the importance of legislation and governmental regulations has been mentioned multiple times (Lampe et al., 1991; Lawrence & Morell, 1995; Post, 1994; Vredenburg & Westley, 1993). As mentioned before, there is EU-wide legislation on its way targeting the largest companies to report on their supply chain with some specific accents on biodiversity (Sfeeri, 2022). The literature on sustainability has also shown a clear link between stakeholder pressure from consumers, communities, and NGOs and companies' decision-making surrounding environmental action (Berry and Rondinelli, 1998; Buckholz, 1991; Hassini et al., 2012; Lawrence and Morell, 1995; Starik, 1995). Lastly, a factor that can influence a company's decision to engage in supplier engagement for biodiversity is the availability of a framework to measure and manage biodiversity. As the previous section shows, there are still many difficulties in creating a standard to accomplish this (Addison, Bull, & Milner-Gulland, 2018; Lammerant et al., 2019).

The theoretical framework that was created for this thesis based on existing work, which is shown visually in figure 2, will form the basis for the analysis of the results. Since there is currently not that much research on the topic of supplier engagement for biodiversity some of these factors might not come up in the results and other, new factors might appear. However, since all of these factors have been mentioned extensively in the literature they are relevant to the topic at hand.



Figure 2. Theoretical Framework Supplier Engagement for Biodiversity

4. Methodology

4.1 Data collection

To collect data, businesses were contacted with the question to participate in an interview surrounding supplier engagement for biodiversity. The contacted businesses were companies that were known to have a focus on sustainability. Therefore, the organizations that were targeted for interviews were those who already had some knowledge or at least interest in the subject of biodiversity. This choice was made since the aim of this research is to gain insights into how supplier engagement plays out today and what are the struggles and/or limitations of it. Hence, it would not be insightful to hold interviews with organizations that do not know what supplier engagement is or how their business activities influence nature and climate.

In total seven interviews took place with seven different companies. The companies are shown in Table 2. For all interviews, there was one representative per company while for Colruyt there were two representatives present. For five of the interviews, the interviewees were sustainability managers or members of the sustainability team. For the two remaining interviews, the interviewees were a procurement manager and a founder. In the results section, the companies will be named when talking about sustainability actions and supplier engagement, but questions surrounding personal opinions will be displayed anonymously. The reason for this is that personal opinions were not mentioned to represent the organization interviewees were interviewed for but rather their own ideas and beliefs when it comes to supplier engagement for biodiversity. Three interviews were carried out in Dutch and later translated, the other four were carried out in English.

Table 2. Interviewed companies

Company	Sector	Size	Headquarters	Founded	Interviewee
Absolut	Alcoholic Beverages	Multinational	Sweden	1879	Agricultural Technologist
BluApple	Food Waste Innovation	SME	USA	2009	Founder
Colruyt	Retailer	Larger corporation	Belgium	1950	Sustainability Staff

Decathlon	Sports Equipment	Multinational	France	1976	Sustainability Staff
Greenyard	Fruit and Vegetables	Multinational	Belgium	1965	Business Development Manager
Nudie Jeans	Clothing brand	SME	Sweden	2001	Climate and Environmental Manager
Stockeld Dreameary	Plant-Based Alternatives	SME	Sweden	2019	Procurement Manager

Absolut vodka is a producer and exporter of premium vodka based in Åhus, Sweden. The company is part of the Pernod Ricard group located in Paris, France. Absolut was founded in 1879 and has since grown to be sold in 126 countries. Even though 100% of Absolut vodka is produced in Sweden, 99% of that gets exported globally.

BluApple is a company located in the United States of America that focuses on creating innovations to battle food waste. They were founded in 2009 when the two founders realized the need for a product to keep produce fresh longer when laying in the fridge.

Colruyt is a Belgian supermarket known for offering the lowest prices. In Belgium, Colruyt has a market share of around 30% and is thus one of the largest retailers in the country. The retailer was founded in 1950 and remains a family company until this day.

Decathlon is an international sporting equipment retailer. The company was founded in 1976 in France and has expanded to 60 countries with 45 production companies. By now there are the larger retailer of sports gear worldwide and produces large parts of their products in their own factories.

Greenyard is a fruit and vegetable supplier for supermarkets. Greenyard was founded in Belgium in 1965 and has since expanded its activities to other countries in western-Europe. They are the middle-man between farmers and supermarkets and offer fresh, frozen, and canned fruits and vegetables.

Nudie Jeans is a denim brand based in Sweden. The company was founded on the idea of creating more sustainable jeans in 2001. Their focus is on creating designs that can be worn for a lifetime.

Stockeld Dreamery is a company based in Sweden that creates plant-based alternatives for cheese. It was founded in 2019 with the idea to create a shift away from animal-proteins to a plant-based diet. Currently, they have three varieties of cream cheese that are marketed as a plant-based alternative for cheese with a significantly lower CO2-impact.

4.2 Methods

For this research, a qualitative approach was chosen to be able to go in-depth on a small number of observations. Since not that much is known about how businesses currently view and utilize supplier engagement for biodiversity, we follow Gerring (2017) who suggests that qualitative research is more suitable here. For the collection of our primary research data, semi-structured interviews were carried out. In qualitative research, semi-structured interviews are the most frequently used method (DiCicco-Bloom & Crab-tree, 2006) since they are known as being flexible and versatile (Kallio et al., 2016).

An interview guide was created where the main themes that needed to be addressed during the interviews were set out and some general questions were formulated. Moreover, some follow-up questions were created for different options but with the possibility to react freely to what the interviewees were stating. The main themes in the interview guide were the impact of the business on biodiversity, supplier engagement for biodiversity with its difficulties, and legislation for supplier engagement and biodiversity impact. The interview guide can be found in the Appendix.

During the course of the interviews, the questions asked were slightly adapted to findings from previous interviews. A question was added that aimed at questioning interviewees about how they saw responsibility surrounding supplier engagement for biodiversity and a specific question about certification as a way of supplier engagement for biodiversity.

Some potential limitations of the questions asked were that the questions focused on the firm as being the focal firm in the supply chain. However, some companies might only hold a small share of their suppliers' sales or even be suppliers in some way themselves. However, in the interviews, it seemed that even the smaller companies within a supply chain yielded interesting results. Nevertheless, some questions could have been framed better according to the size of the company that was being interviewed.

5. Results

In this section, the results from the interviews will be presented and then discussed in the next section. Firstly, the companies' sustainability actions will be presented with a special focus on biodiversity if they already work with this. Afterward, the different forms of supplier engagement will be set out per company to give an overview of the current state of supplier engagement. Lastly, the results surrounding internal and external factors will be set out before diving into the discussion.

5.1 Sustainability actions

Most companies that were interviewed already implemented several sustainability practices mostly when it comes to climate. For multinationals and large corporations, there is already legislation about what they need to report on, but these companies still seem to do more than obligatory actions. The small and medium enterprises also had a focus on biodiversity. For two of these, the reasons for existing are partly based on climate change and sustainability.

“Our whole vision and mission is specifically based on climate change” – Stockeld Dreamery

For BluApple they started incorporating sustainability a short time after its founding because the founders realized it was important and their customers also cared about it.

Five out of the seven companies have measured their CO₂ impact and put targets on reducing their impact. The ones that do not have CO₂ targets, which are BluApple and Stockeld Dreamery, do not have targets for various reasons. For BluApple they are a small company with few employees who do not possess the needed knowledge for measuring their CO₂-impact. Furthermore, hiring an independent consultant to measure it for them would be too costly. For Stockeld Dreamery the reason lies more in that they are a relatively young company and currently focusing on creating the best product possible. They have measured the impact of their vegan products compared to the current dairy counterparts to motivate consumers to switch to plant-based alternatives and lower their impacts.

Two interviewees, from Nudie Jeans and Decathlon, also talked about how they are attempting to change the consumption patterns of their consumers. Both companies offer repair and return services. When products are returned they get refurbished and put back on the market as second-hand. Nudie Jeans also focuses on educating their costumers on the best ways to use their jeans so they have the

longest life possible. On the other hand, Decathlon offers subscription formulas for their products so customers can rent specific sports gear or try out different sports with the help of these subscription systems. Both of these companies also talked about the importance of thinking about this during the design phase. Nudie Jeans focuses on timeless designs for their jeans while Decathlon focuses on how to design products so they can be repaired and last long.

When it comes to biodiversity, most businesses state that this is an area in which they still aim to improve significantly. However, some companies already have some initiatives in place.

Multiple companies working with farmers, these are Absolut, Colruyt, Greenyard, & Nudie Jeans, have some form of a scheme set up to make sure these farmers take biodiversity into account. This will be discussed further in the section about supplier engagement.

Nudie Jeans also had some student projects which focused on biodiversity. One project carried out a life-cycle assessment to analyze which materials would be best to use for products from a biodiversity perspective. Another one tried to look at how the company impacts biodiversity throughout its production chain.

Decathlon also mentioned that they choose renewable energy in the form of solar and wind energy, but refuse to work with hydropower or biofuels. Their reasoning behind this is that the latter two still have a high impact on biodiversity while the former two have a lower impact. Building wind turbines has some effect on biodiversity but when compared to the other forms mentioned, this remains the preferred option for them.

Colruyt also already engages in several actions which focus on biodiversity. When it comes to their own sites they are set up in a biodiverse way by having bee hotels, green rooftops, flower gardens, etc. Next to that they also have a pilot project currently running on their own farming grounds where they work with a company using bees and pollinators to create a biomonitor. This monitor shows what the quick wins are but also which structural differences they can make to really improve their impact on biodiversity. One thing they also do is focus on reforestation in the Democratic Republic of the Congo.

In general, we can see that these companies already have a quite strong focus on sustainability and this might translate in their replies surrounding supplier engagement for biodiversity.

5.2 Supplier engagement for biodiversity

Talking about supplier engagement for biodiversity yielded one interesting finding: almost all the companies that engaged in supplier engagement already mentioned how this was not yet the case for biodiversity since it is a very complex concept and difficult to measure. Therefore, this section will mostly talk about the supplier

engagement that is already in place currently even when this is not specifically targeted to biodiversity. In this section, each company will be discussed with their answers concerning supplier engagement.

Absolut already has quite an extensive form of supplier engagement implemented at the moment. They have several types of suppliers, including packaging and bottle suppliers but in this case, the focus will be on the farmers producing winter wheat for the vodka. All vodka from Absolut is produced in Sweden, leading to around 140.000 tons of winter wheat produced in Sweden yearly. The focus is on the farmers since they have the largest impact on biodiversity and thus require the biggest focus at the moment. Absolut's procedure for supplier engagement goes as follows, the suppliers receive a document with several actions they can choose from to implement every year. Each of these actions has points accorded to them and in total each supplier needs to achieve twelve points. When the twelve points are not reached, Absolut gives information sessions and tries to assist their suppliers as much as possible to help them achieve the twelve points rather than deciding not to work with them. The list of actions is updated every year to include new legislation and new research. In these actions there is a separate chapter dedicated to biodiversity, this includes building infrastructure for insects, birdhouses, the presence of ponds on the farm, etc.

BluApple does not yet engage in supplier engagement according to them. Their reasoning for this is that they are a small company, meaning that they only represent a small percentage of their suppliers' sales. Therefore, they do not have much bargaining power to demand standards from their suppliers. However, whenever they see innovation surrounding e.g. packaging they could use they mention this to their suppliers and ask if it is possible to implement this. Furthermore, they mentioned the following:

“We're trying to align ourselves with people who have the same kind of set of values we have. Can I guarantee that that is 100% effective? No, I can't.” – BluApple

With this, they aim to find suppliers that fit well with their business and their ideas. Something else that was mentioned is that they try to find suppliers who are good people since they believe that good people will try to do the right thing. In some way, it can be argued that this is still a form of supplier engagement since they do aim to get suppliers to innovate and work well with them.

For Colruyt, the largest focus for their supplier engagement is on the social and climate aspect of sustainability. They already work with quite some minimum requirements suppliers have to comply with. There are several requirements for minimum certification when it comes to products like cacao, palm oil, coffee, etc. For cacao, for example, this is not only for chocolate but for every product they sell that has cacao incorporated into it. Similarly, they are also involved in some projects surrounding living wages. These minimum requirements apply to every supplier

Colruyt has, however, their suppliers are very diverse with farmers in Africa, South America, and Europe. Currently, there is also a project with around forty products where Colruyt knows its entire supply chain and works with them to try and realize the most positive outcomes for different Key Performance Indicators (KPIs) with some including biodiversity aspects. In this, the focus is not only on what negative impacts to avoid but also on the positive impacts they can achieve when working together. At this moment, some of the actions Colruyt does include biodiversity impacts such as the previously mentioned actions on their own sites and the supply chain project including biodiversity KPIs. However, there is not yet a specific focus on biodiversity. The actions surrounding biodiversity are seen as part of sustainability actions rather than a separate topic. Nonetheless, this is likely to change with the upcoming EU regulation surrounding the certification of no deforestation and the due diligence laws.

When asked about supplier engagement for biodiversity, Decathlon stated that they engage their supplier and involve them in their strategy as much as possible. Decathlon has suppliers all over the world and makes sure that these suppliers comply with local laws and regulations or even more ambitious goals. However, for biodiversity, they do not yet have any supplier engagement in place. Furthermore, similar to Absolut, Decathlon also has a system in place to grade its suppliers and their actions. For them, the suppliers get ranked on a scale from A to E where A means the company does more than Decathlon requires from them and D or E means things need to change in order for Decathlon to keep working with this supplier. When a supplier finds themselves in grade E, they will get maybe three months to improve whereas for grade D this might be six months or even a year. If they do not make sufficient improvements, Decathlon will not continue working with them. However, if suppliers state that they would need a certain commitment from Decathlon, say for three years, to change their processes to follow Decathlon's ambitions, Decathlon will work with them and commit for three years then. Thus, the company really focuses on working together with its suppliers and has a long-term vision for its supply chain where they aim to work with a small but trusted amount of suppliers.

Greenyard works with different strategies for different market and supplier segments. Since the company works with farmers from Mali to the Netherlands, they choose to treat them in different ways. An example of this is that for the Dutch market, they have a collaboration with the supermarket Albert Heijn called "better for" ("beter voor" in Dutch). In this, there is a higher focus on biodiversity and generally on sustainability especially for this supermarket. The reason for this is that consumers are asking for these types of products in this market and farmers can follow the standards asked for by consumers. However, this program also leads to higher costs for the farmers so it would not be feasible to implement this for all farmers worldwide. Greenyard also works with certification to make sure farmers

reach certain standards they want to achieve. These certifications are more ambitious than the standard license-to-operate so the farmers are pushed to incorporate sustainability into their practices.

“If you certify it, it’s an easy way for us to execute and keep track of it.” - Greenyard

When it comes to Nudie Jeans the supplier engagement takes on multiple forms. First of all, they work with 100% certified cotton for all their production. This means that they only work with suppliers who can offer them certified cotton. All their cotton comes from Turkey or India and they have suppliers in Europe and Africa as well. There is a list of countries where Nudie Jeans does not use suppliers since they cannot ensure that safety, human rights, and environmental targets will be respected. Furthermore, they have an exit strategy concerning actions they will not tolerate from suppliers to terminate their collaboration. This includes matters such as child labor and certain chemical management practices. Nudie Jeans also knows its entire supply chain throughout all the tiers. They then hold supplier-specific meetings to see how this specific supplier can lower their climate impacts. The company focuses on educating their suppliers so they can set this up themselves rather than enforcing rules they need to follow. The mindset behind this is the following:

“But we need the suppliers to sort of own the question and the work themselves, also so that if we would leave them, that this whole structure is not falling because we are leaving” – Nudie Jeans

It was also mentioned that targets for climate will likely be added to the list of things suppliers need to achieve in order to work with Nudie Jeans.

Stockeld Dreamery does not really participate in supplier engagement at this moment. However, they did state that:

“We would sort of rely on our ingredient processors to control that downstream with the growers and many of the ingredient suppliers at least for those five main ingredients are in my view responsible corporate citizens, so we trust them to do what is best with regards to the primary aspect of it.” – Stockeld Dreamery

Hence, they work with products that are known to be quite sustainable and trust in their growers and suppliers. Currently, Stockeld Dreamery has five major ingredients for which they use different suppliers: chickpea, lentil, potato starch, coconut fat, and rapeseed oil. Stockeld itself is in contact with the manufacturer of these products and not necessarily with the grower itself.

As can be seen from these explanations of the different types of supplier engagement incorporated by the different companies, the focus on biodiversity within supplier engagement is still relatively low. However, all interviewees agreed that supplier engagement is the way forward in tackling our problems concerning

biodiversity. Interviewees said it was “the only way”, “absolutely key”, and “something all brands should do”. This is then related to the transparency of the supply chain since it was mentioned that if you do not know your suppliers, you cannot guarantee that your product is sustainable.

When then asked about who should be responsible for making this more widespread the opinions were divided. While some interviewees talked about how it should be the responsibility of big companies since they hold the most power within a supply chain, others talked about how the responsibility should be divided between several stakeholders. Since there is such a matrix of stakeholders involved, there should not be a focus on one single stakeholder. For them, the customers, the government, and the large companies have a role to play in making supplier engagement more widespread.

5.3 Internal factors

As mentioned in the theoretical framework the internal factors are the top management, the resource availability, and financial or reputational incentives. Not all of these were questioned explicitly in the interviews, however, some results can be deduced from what interviewees mentioned in answer to other questions.

First of all, it is important to make the distinction between companies that were founded with a strong base in sustainability and companies that were not when it comes to the involvement of the top management. In companies where the reason for starting was related to sustainability, the top management is more involved in tackling issues linked to sustainability such as supplier engagement for biodiversity. In the companies that did not have a base in sustainability different situations occurred. The major difference was between having framed the strategy so that sustainability is a large part of it or not. In the cases where sustainability did not become part of the strategy at some point, it seemed more difficult to convince top management of its importance. In one interview it was also mentioned that the top management lacked awareness about the importance of biodiversity and subsequently about supplier engagement for biodiversity. Therefore, there were people within sustainability functions working on getting their managers on board before they could bring up innovative ideas. On the other hand, there was one interview that showed the top management did care about sustainability and issues such as supplier engagement for biodiversity but they lacked the resources to implement it which leads to the second point of resource availability.

When it comes to resource availability multiple interviewees mentioned how it would be more difficult for smaller companies to incorporate supplier engagement for biodiversity than for larger companies because of different reasons. Firstly, the frameworks that do currently exist and are being developed seem to predominantly focus on larger firms and not on SMEs. Moreover, small firms lack the resources

in time, knowledge, and finance to incorporate supplier engagement for biodiversity. This idea seemed to be unanimous since both interviewees from large and small firms mentioned how the lack of resources in small firms would make implementing supplier engagement for biodiversity more difficult. Furthermore, there was also the mention of a more general lack of resources on the topic of biodiversity and how to implement supplier engagement for biodiversity.

“Lack of knowledge, lack of resources, and lack of structure and sort of knowledge on how to start the work. Because it feels also a bit overwhelming because it's complex. It's super complex. It's very local and different to local settings. It's like you don't really know where to start.”

This links back to multiple interviewees mentioning how difficult the concept of biodiversity is and that more knowledge is required to find the best aspects to focus on.

When it comes to financial or reputational incentives this came forth less in the interviews. The reasons for companies incorporating supplier engagement for biodiversity were not specifically questioned and from the interviewees, it seemed that all of them genuinely had an affection for the topic and thought it was an important thing to focus on. In some interviewees, it was shortly mentioned that legislation pushes them to research these topics more. When it comes to the reputation it was mentioned by some companies that either their consumers do choose them for their sustainability while in others consumers only choose them for their prices, however, this will be discussed more in the next section on external factors.

5.4 External factors

The external factors discussed here are the legislation, the pressure from stakeholders, and the biodiversity frameworks available.

When it comes to legislation, there were some mixed opinions among the interviewees. On the one hand, some of the interviewees were excited about the upcoming legislation for different reasons. Some mentioned how the legislation would create an equal playing field between organizations. Since all of the largest firms will be affected by the new law, at least they will all be putting in the same efforts which would make competition fairer again. Others mentioned how it would motivate firms, even the ones that would not be directly affected by the legislation, to put more efforts towards supplier engagement for biodiversity which is something everyone would benefit from. However, some interviewees also did not see the legislation as very positive. According to them, it is too early to focus on legislation and awareness needs to be raised first. Some others also mentioned how

there was no lack of legislation but rather it needed to be enforced more. Creating legislation is useless if companies do not act according to this legislation.

For stakeholder pressures, the focus will be on consumers and suppliers since these two groups came up in the interviews while others remained unmentioned. Looking at pressures from consumers gave an interesting distinction. For some firms, where the focus of their products is more on sustainable products the pressure from consumers seemed to be much higher than for companies that had a marketing strategy that focused more on lower prices. In the case of sustainable products, consumers inquired about sustainable packaging, more sustainable design, etc. On the contrary, organizations that have a stronger focus on price competition revealed that their consumers do not seem to have gained preferences for more sustainable products but are still choosing them for their low prices.

In the interviews, there was also a focus on suppliers which makes for an added layer of difficulty. One interviewee mentioned that suppliers seem unsure to share data with larger companies since they fear what this data will be used for. Furthermore, some suppliers mention that they lack a financial incentive to participate in these practices. In that case, they ask for longer commitments or support from the focal firm asking them to change their production process. Moreover, all suppliers are different which makes it difficult and time-consuming to find a supplier engagement strategy that fits all of them. It was mentioned by several interviewees that there is no such thing as “the supplier”:

“The supplier, I don’t think that exists. We have suppliers who are very advanced, who are very enthusiastic. We also have suppliers who show resistance and don’t know the topics we’re talking about.”

Generally speaking, the suppliers did not seem to put extra pressure on the firms to implement supplier engagement for biodiversity, however, they are important to consider throughout every step of implementing supplier engagement.

Lastly, the biodiversity framework, or lack thereof, was mentioned in every single interview. Many interviewees mentioned how difficult and complex the concept of biodiversity is and that there is currently no clear framework explaining how to map a company’s impact on biodiversity. Therefore, it is also difficult to know how to lower that impact. In other words, it is difficult to measure and quantify one’s impact on biodiversity.

“We know it’s important, but we can’t quantify what’s the most important to do at the moment.”

“We know that two is the double amount of one, we don’t know if two flowers are better than one.”

Currently, there are multiple frameworks on the market that several interviewees mentioned, such as Science-Based Targets for Nature and Taskforce on Nature-

Related Financial Disclosure which were mentioned by multiple interviewees. However, it is not clear which of the frameworks will become the standard comparable to what CO2 is for climate. Therefore, the companies are unsure which framework they should follow and rather wait until a clear standard has been adopted.

“Many organizations and partnerships are working on the translation to frameworks that are useful in business, but for now, they still come across as quite complex. Not everyone is aligned, there are still multiple initiatives so at this point it feels too early to pick a framework.”

6. Discussion

The results explained in the previous section show some interesting trends which will be discussed here. The three main trends that will be discussed are the complexity of the topic ‘biodiversity’ together with the subsequent lack of framework, the duality between the given importance of supplier engagement for biodiversity with the absence of action, and the effect of firm size on the current use of and views on supplier engagement for biodiversity. This section will conclude with the implications of this research and some limitations of this study.

6.1 The complexity of biodiversity

One thing that came forth in almost every interview was the complexity of biodiversity. This often led to a comparison with CO₂ equivalents for climate change.

“I think biodiversity is a super complex and technical given, which climate is as well but there you can redirect everything to CO₂ equivalent. With biodiversity, it is about ecosystems that influence each other in positive or negative ways where you have to include the urban context as well. It’s about spatial planning which is not easy. It’s about so much more.”

Almost every interviewee mentioned how easy it currently is to focus on climate change since the CO₂ measure is so simple and everything can be reduced to this. They also mentioned that the awareness of climate is currently very high which means the majority of people more or less grasp the concept and see it as important. Nevertheless, the concept of biodiversity might be easier for people to understand than climate since it is more tangible. People can create an image in their head about what biodiversity is but this is more difficult to do for climate change. This was mentioned by several interviewees as something positive since once awareness is higher, people might find it easier to focus on and grasp.

The results show that the companies are currently aware of the complexity of biodiversity and do not assume it will be as easy to measure as CO₂ for climate impact. What they do expect, is a framework they can follow to map this complex impact and be able to set targets and lower their impact. However, currently, this complexity often translates into companies being unsure about where to start or where their impact matters most. Therefore, the choice is often made to wait a bit more until it is more clear based on research where to focus on. This is also in line with what the literature suggests about there not being one clear framework that will be the standard for biodiversity measures, which was also mentioned by some interviewees.

Most of the interviewees did mention several frameworks or standards that are currently in the making or already exist, which shows that they are interested in this topic and want to engage, however, they are struggling with the lack of clear standards as was mentioned in the literature (Addison, Bull, & Milner-Gulland, 2018; Lammerant et al., 2019). Since many frameworks are currently being created and will be launched this year, companies tend to wait so they can see which one becomes more generally adopted and accepted. Since the comparison often gets made with CO2 it seems like companies are hoping or waiting for one clear standard which might not be desirable. As mentioned in the literature, different scenarios might ask for different frameworks. Since several aspects of businesses, such as size, sector, location, etc., influence the way they impact biodiversity, specific frameworks for these specific circumstances might be more fitting. However, currently, even when businesses want to start working on their biodiversity impact, they simply do not know how to start which leads us to our following point.

6.2 Duality of importance and lack of action

When looking at the current forms of supplier engagement present within the sample, it can be seen that every company has some form of supplier engagement set up. However, almost no biodiversity aspects or focuses are incorporated into this supplier engagement at the moment. As mentioned companies claim this is due to the complexity of the subject and lack of knowledge.

Interestingly, when asked how important supplier engagement for biodiversity is, all interviewees mentioned it as a high priority.

“It’s absolutely key”

“It’s the only way”

“It should be something that all brands do. And it’s also connected again to a transparency to know your suppliers.”

Companies are aware that their biggest impact on biodiversity very likely lays in their supply chain and that therefore this is an important aspect to tackle. Furthermore, the last quote relates to how transparency is becoming more and more relevant (Marshall et al., 2016). It was mentioned that companies cannot claim to be sustainable or responsible if they are not transparent about their supply chain or even know it.

In this, we can thus see the paradox of companies stating the importance of supplier engagement for biodiversity and simultaneously not engaging in it yet. From the people that were interviewed, everyone seemed to have a high level of knowledge about and engagement with the topic of supplier engagement for

biodiversity. Almost every interviewee knew about existing frameworks, even if they were not targeted at their company because of size, sector, etc., about the importance, and about where the difficulties currently lay. Where the knowledge gap lays for these organizations is in how to measure and reduce their negative impact on biodiversity and how to increase their positive impact. Multiple interviewees mentioned aspects such as bee hotels, having more green space in the parking lots, etc. yet said in the same sentence that they did not feel this was enough and that they want to do more.

Another aspect that may influence companies not incorporating supplier engagement for biodiversity at the moment is the large differences between suppliers. In our sample, the company that has the most elaborate strategy when it comes to supplier engagement for biodiversity is Absolut. They have a chapter dedicated to biodiversity within their supplier evaluation. One thing that might make this possible for them is that all their winter wheat suppliers are located in Sweden which already makes this quite a homogenous sample. For other companies with farmers and suppliers on all continents, it might be more challenging to create supplier engagement programs. On the one hand, creating one single program for all these suppliers might make it so that some suppliers have to undertake large efforts to be able to achieve these standards while others might already comply with the standards and would be able to do more if pushed. On the other hand, creating separate programs for separate suppliers is time-consuming and adds a layer of difficulty. Simultaneously, some suppliers might feel like they are being treated more harshly than others because of the distinction between them. In conclusion, it is clear that having a homogeneous group of suppliers makes it more straightforward to implement supplier engagement.

From this, it seems like there are simultaneously positive and negative things to take from this. Almost all interviewees want to implement supplier engagement for biodiversity in the future, their knowledge about these topics is currently already relatively high, and all they are waiting for is a clear standard or framework they can follow. However, it is unclear when there will be clear standards and frameworks that will become globally accepted. Therefore, companies may be waiting for quite some time before measuring and lowering their biodiversity even though we need to take action as soon as possible to halt and reverse biodiversity loss. Simultaneously, many companies currently still struggle with knowing their entire supply chain, which is an issue that won't be solved by the arrival of a biodiversity framework. In this, the upcoming legislation will play a large role for large firms that will be targeted, but small and medium enterprises might not know their supply chain for quite some time. In conclusion, the people that were interviewed gave the impression that there is a lot of hope for the near future with new biodiversity frameworks being in the works while simultaneously it remains

to be seen how quickly businesses will adopt these frameworks and start actively working with their biodiversity impact and expanding this to their supply chains.

6.3 Effect of firm size

One thing that came forth often in the literature and also in the interviews is the difference between firm size when it comes to implementing supplier engagement. Therefore, this section will look at whether or not these perceived difficulties can be seen translated into actions from small and large firms. Here, it is important to note that in this research the small firms all have a strong focus on sustainability so they might not be representative of small firms in general.

When looking at how firms currently engage in supplier engagement some interesting aspects come forth. For larger firms, the focus seems to be on working out a clear plan that suppliers can follow. Several of the larger firms have minimum requirements and create lists and programs their suppliers can or should follow to improve their sustainability efforts. Multiple of them have clear rules and guidelines their suppliers should follow such as certifications, minimum efforts in sustainability, CO2 measurements, etc. In this sense, the larger firms focus more on compliance-based supplier engagement which was mentioned in the literature as being less effective to change suppliers' mindsets (Locke et al., 2007, Locke et al., 2009). However, many of the larger firms interviewed went further than only the rules and regulations and worked closely with suppliers to help and motivate them. For small firms, there seems to be more focus on informal aspects of supplier engagement. It is more about educating the suppliers and having good relationships with them so things such as sustainability can be discussed. The smaller firms sometimes have minimum requirements but in general, they focus more on choosing suppliers they trust since then they also believe they will do good for our planet and people. Furthermore, small firms also mentioned that their impact on their supply chain is relatively small so they have less bargaining power to influence suppliers' decisions.

It was also mentioned that oftentimes large firms have sustainability teams or even a specific group focused on biodiversity, meaning that they have a large amount of resources allocated to this specific topic working on finding solutions and best practices. Meanwhile small firms sometimes only have a few employees where one person already has multiple roles and they do not have space to focus on sustainability specifically. This can be related to the literature where it was mentioned that small firms often lack the resources to engage in sustainability actions (Aragon-Correa et al., 2008; Wong et al., 2020).

6.4 Implications of research

These results have interesting implications for how supplier engagement for biodiversity should be viewed and what should be the focus currently to make sure organizations start working with this subject.

First of all, one thing that came forth in every section of this thesis is the lack of a clear standard or biodiversity framework. This should be the primary focus now to offer organizations a way to measure and lower their negative impacts on biodiversity. Many organizations seem eager to start working with this and the lack of framework is the main reason that they cannot or do not know how to do this.

Second, higher awareness should be created within businesses but also with consumers and the general public. Much focus has been on climate change and how to lower businesses' but also people's carbon footprint (Pandey, Agrawal, & Pandey, 2011), but the same focus lacks for biodiversity impacts even though both concepts are closely linked (Panwar, Ober, & Pinkse, 2022). Even though biodiversity is a complex issue, as mentioned before, it is more tangible than climate so once people realize its importance they might even relate to it more than they currently do to climate change.

Furthermore, a strong focus should be on educating and assisting smaller firms with their sustainability efforts. The lack of resources has been discussed in detail by several scholars (Aragon-Correa et al., 2008; Wong et al., 2020) and simultaneously all small and medium enterprises combined have a very significant impact which is even larger than large firms' (Arnold, 2019; Marshall, 1998; Smith and Kemp, 1998). Currently, small organizations often do not have anyone that can focus on sustainability or biodiversity within their firm so it will become increasingly important to also manage to engage them when it comes to these issues.

6.5 Limitations of research

In this section, the limitations of the research will be discussed shortly. First and foremost, this study had a small sample group since the focus was on in-depth interviews and more explorative research. This small sample group might thus lead to several subgroups of the population being left out or underrepresented. Since the focus was on a topic that is not very widespread yet, the sample group was mostly large businesses or small organizations with a focus on sustainability. It would be interesting to see how small organizations that are not necessarily focused on sustainability see this topic and their role in it.

Furthermore, the businesses that agreed to do an interview on this topic are likely the businesses that already have a certain amount of knowledge about or experience with it. This might shape the results of this thesis in that it shows examples from

organizations that might already stand further than the average. However, this fits the aim of the research so in that sense it is not necessarily a limitation.

When it comes to the methods two things could influence our results and the quality of them: the questionnaire and the online format of interviews. For the questionnaire, it was good to change it according to previous interviews when interesting things were mentioned that could also relate to other companies in the future. However, the interview guide was created based on research and not on an existing interview guide in this field. Since the topic is still so new, it seemed more feasible to create a new interview guide to be able to touch upon all aspects of this specific topic. However, maybe it would have been better to have created an interview guide and then done one or some pilot interviews to gain specific feedback on the questions and how to phrase them better or which questions were useful or not. Furthermore, all interviews were carried out online which gave the freedom of finding companies to interview worldwide but the constraint of not being able to interact in real life. Therefore, some nuances might have gone lost and interviewees might have felt less at ease with the person interviewing them. Even though all interviewees seemed to respond openly, some interactions might have been different if the interviews were held in person.

7. Conclusion

The aim of this research is to give an overview of how organizations currently view and utilize supplier engagement for biodiversity. This study filled a gap in the literature by addressing the topic of supplier engagement for biodiversity which is still relatively new and incorporating the views and perspectives from people within the organizations.

The findings from this research show some interesting aspects that relate to the literature and can be utilized in further research surrounding this topic. First, the research highlighted the complexity of biodiversity and how this leads to difficulties in measuring impact. As was shown in the literature, there is currently no framework or standard organizations can use to measure and lower their biodiversity impact. This is also the main reason organizations are currently not working with supplier engagement for biodiversity yet. Many organizations already have some form of supplier engagement set in place, however, focusing this on biodiversity remains difficult. Furthermore, all organizations interviewed want to be able to measure and lower their impact but struggle with the know-how on ways to do this. Research needs to still occur to show which aspects of biodiversity are most important for organizations to focus on. Lastly, this research also showed some differences between small and medium firms and large enterprises. Because of the lack of resources in terms of knowledge, financials, and time, smaller firms often do not engage in sustainability actions in general so also do not in supplier engagement. Furthermore, their smaller size gives them less bargaining power with suppliers so their focus is more on having good relationships rather than on having structured rules and guidelines for their suppliers such as the larger corporation in this sample had.

In general, these results are promising since most companies do want to work with these concepts but usually lack some knowledge on how to do this. Therefore, future research should focus on identifying the most important aspects an organization should focus on to lower its biodiversity impact. Currently, some biodiversity frameworks are in the making so it will become increasingly important to guide organizations in knowing which framework fits their needs best and how to incorporate this into their strategy. Moreover, the focus should also be on smaller firms that are currently not targeted by legislation and often struggle more with supplier engagement or sustainability initiatives in general but have quite a large impact when all are combined. Therefore, it is important that they are also motivated and educated to start working with supplier engagement for biodiversity.

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Popular science summary

The loss of biodiversity is a problem we all know about, from species going extinct to trees being cut for agricultural purposes. We all have to do our part to make sure biodiversity loss is stopped and even reversed. That is the reason that this thesis focuses on what companies can do to lower their impact on biodiversity loss throughout their supply chain or in other words on supplier engagement for biodiversity. Supplier engagement can be described as the commitment from suppliers to a certain brand's views and values, including sustainability goals. The research found that some companies already try to push their suppliers to lower their impact on biodiversity, but for most, this is not yet the case. The biggest reason for companies to not work with their supply chain to lower their biodiversity impact is because there is currently no way of measuring this impact so companies remain unsure about where to start and what to focus on. On top of that, smaller companies with fewer resources have less impact on their suppliers so they focus more on choosing suppliers that fit well with them rather than having more rigid rules and regulations for their suppliers. Despite most companies not working with supplier engagement for biodiversity, all people that were interviewed agreed that it is a crucial part of tackling biodiversity loss.

These results came from seven interviews carried out with seven different companies in Europe and the United States of America. The companies are the following: Absolut, BluApple, Colruyt, Decathlon, Greenyard, Nudie Jeans, and Stockeld Dreamery. From these, three companies fall under the category of small and medium enterprises, while the four other companies are large corporations and multinationals. These companies were chosen since many of them have a focus on sustainability and knowledge about supplier engagement in general.

The main takeaway points from this thesis are that even though many interviewees want to start working with supplier engagement for biodiversity, their companies currently are not really. From what interviewees said, the focus of researchers and policymakers should be on creating a biodiversity framework companies can adopt to measure and lower their impact. In this, it is important that there is a focus on smaller firms to help them also work with this. Also, awareness should be created about how important supplier engagement can be in solving biodiversity loss, which this thesis also helps to do.

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Appendix

Questionnaire:

- Can you shortly introduce yourself and the company you're working for?
- What are your interest and concerns surrounding biodiversity and climate within the organization?
- Do you currently do something already to lower your impact on climate and biodiversity?
 - If yes, what?
 - If no, what do you need in order to start working with this, legislation, motivation,..?
- Have you heard about supplier engagement and if so, in what context do you know about it? (Use the previous question to see what all they are focusing on and build from there)
- Does your business work with supplier engagement already? Also for biodiversity?
 - If yes, do you think that there are currently enough tools (knowledge, legislation, and focus) for supplier engagement for biodiversity? What are the biggest challenges for your organization? Are there certain things you struggle(d) with while implementing supplier engagement?
 - If no, what is the reason you do not participate in supplier engagement? Do you think there are still things missing to motivate organizations to start engaging their suppliers to lower their impact?
- Do you think that legislation on supplier engagement for biodiversity is necessary or more negative? Would it motivate you more knowing that legislation is on its way? (supply chain laws that will come up in the next years)
- Who holds the responsibility to raise awareness surrounding the importance of supplier engagement for biodiversity?
- How important do you think supplier engagement is in tackling the current problems of biodiversity loss?
- Can you think of any other actions that could help tackle the biodiversity loss problem?

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