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The Impact of CSRD in Shaping Corporate Sustainability and Operational Practices

Master's thesis in Quality and Operations Management

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Analyzing the Implementation of CSRD in Organizational Contexts

An empirical study of how organizational maturity,
coordination mechanisms and supply chain
characteristics shape sustainability reporting processes

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SUMMARY

This thesis addresses how organizations' structure and governs sustainability reporting practices in response to the Corporate Sustainability Reporting Directive (CSRD), with a focus on sustainability data management, supplier collaboration and information sharing within supply chain networks. The study further aims to increase the understanding of the challenges companies face when integrating sustainability reporting into their supply chain management, including difficulties related to data quality, coordination and cross-organizational collaboration. The study is based on a qualitative research design combining a literature review with semi-structured interviews conducted with representatives from four companies operating in different industries and with varying organizational characteristics. The empirical findings were analyzed using theoretical frameworks related to supply chain networks, sustainable supply chain management and sustainability reporting in supply chain contexts.

The findings show that the implementation of CSRD has increased the formalization of sustainability work and strengthened cross-functional collaboration between functions such as sustainability, finance, procurement and risk management. Sustainability reporting is increasingly integrated into governance structures and financial reporting systems, creating a need for new routines connected to data collection, validation and coordination between organizations. Additionally, the study identifies challenges related to data quality, traceability and the integration of sustainability data into operational processes, in particular for information from suppliers beyond tier-1 levels in global supply chains.

The findings further demonstrate that companies largely use risk-based approaches in their supply chain governance, where suppliers are prioritized based on sustainability risks and strategic importance. Collaboration with suppliers and industry initiatives is found to be important to improve transparency, harmonize reporting expectations and reduce the administrative burden connected to sustainability reporting. The results also indicate that sustainability reporting is increasingly considered to be more than a compliance requirement and contributes to competitiveness, transparency and long-term business value. The thesis contributes to the understanding of how sustainability reporting requirements under the CSRD are translated into operational practices and governance structures within supply chain networks.

Keywords: Corporate Sustainability Reporting Directive (CSRD), Sustainability Reporting, EU Sustainability Regulation, Sustainable Supply Chain Management, Supply Network Structure, Cross-functional Coordination, Supplier Integration

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1. Introduction

In a fragmented European regulatory landscape, where sustainability reporting practices varied significantly between member states and corporate responsibility initiatives were largely voluntary, the need for a more coherent framework became evident. Increasing investor demand for comparable sustainability information, growing public expectations on corporate accountability and the accelerating urgency of climate and social challenges put pressure on the European Union to strengthen its regulations. Given these circumstances, the EU began developing a more harmonized and mandatory sustainability framework.

This chapter outlines that development. It begins with the Non-Financial Reporting Directive (NFRD), the EU's first structured attempt to regulate sustainability reporting, and its identified challenges. It then presents the Corporate Sustainability Reporting Directive (CSRD), which significantly expands and standardizes reporting requirements, followed by the Omnibus Package, introduced to simplify and adjust the framework in response to concerns about regulatory burden. Finally, the chapter introduces the Corporate Sustainability Due Diligence Directive (CSDDD), which goes beyond reporting by establishing mandatory due diligence obligations across corporate value chains. Together, these directives form the foundation of the EU's current sustainability governance framework.

1.1 Background to Sustainability Reporting

This section gives an overview of the key regulatory developments within sustainability reporting in the European Union. It introduces the main directives and initiatives, outlining their objectives, scope and key requirements. Together, these create the regulatory landscape to which companies are expected to manage and report sustainability-related information.

1.1.1 Non-Financial Reporting Directive (NFRD)

In 2014, the Non-Financial Reporting Directive (NFRD) was introduced by the European Union (EU) (European Union, 2014). The objective of this regulatory requirement was to promote sustainable growth and employment within the internal market of the EU. Further, the legislation intended to give investors and other stakeholders a more comprehensive understanding of companies' performance, development, position and the impact of its operations from a sustainability perspective. According to the European Union (2014), the companies affected by the directive included large, listed companies, insurance companies, banks and other entities that were considered to be of particular public interest by national authorities.

The NFRD required the companies affected to disclose information regarding their business model and policies, as well as their outcomes, risks and key performance indicators in relation to aspects such as environmental and social matters, human rights, anti-corruption and bribery issues. In cases where a company did not have a policy covering the required areas, their absence had to be explained in the non-financial report (European Union, 2014).

However, the directive did not enforce a specific reporting standard, which meant that companies were allowed to rely on different voluntary frameworks, where Global Reporting Initiative (GRI) was among the most used. The GRI standards have been widely adopted globally and provide detailed guidance on sustainability disclosures across environmental, social and governance dimensions (IBM, n.d). While this flexibility allowed companies to tailor their reporting, it also led to inconsistencies in the type, scope and quality of data disclosed.

In 2021, the European Union (2022) stated that the NFRD had not sufficiently improved the quality of the information disclosed by companies covered by the directive. The information reported did not adequately meet the needs of users such as investors and other stakeholders. Further, as the directive only applied to approximately 11,600 companies, the European Union (2022) identified a demand for sustainability related information from companies not yet required to report on their sustainability efforts. In cases where sustainability reports were available, their contents were in some instances insufficient in terms of relevance, comparability, reliability and accessibility.

User demand for sustainability reports increased and the lack of adequate non-financial information created investment risks and contributed to reduced accountability between companies and citizens. There were also uncertainties regarding the contents of the sustainability reports, due to the lack of clear specifications in the NFRD, combined with overlapping national regulations about reporting standards, which resulted in a lack of consensus on what companies should disclose. Because of these limitations, the European Commission presented a proposal in April 2021 for enhanced sustainability reporting: the Corporate Sustainability Reporting Directive (CSRD).

1.1.2 Corporate Sustainability Reporting Directive (CSRD)

The Corporate Sustainability Reporting Directive (CSRD) came into force in January 2023 and aims to ensure that companies disclose sustainability related information that is relevant, comparable, reliable and easily accessible (European Union, 2022). By improving access to harmonized non-financial information from companies in the European Union, the directive is expected to facilitate investors' ability to access sustainability related risks and impacts associated with investment decisions (European Union, 2022). Further, the CSRD also aims to strengthen the social contract between companies and society by increasing corporate accountability for environmental and social impacts. A key difference compared to the NFRD is the introduction of mandatory reporting standards, the European Sustainability Reporting Standards (ESRS) (EFRAG, 2024). The ESRS specify in detail what companies must disclose and how the information should be structured, reducing the ambiguity and increasing comparability between organizations.

According to the European Union (2022), EU-level legislation is necessary to ensure harmonized reporting requirements across member states. Differing national sustainability reporting rules would increase compliance costs for companies operating across different countries and thereby risk undermining the function of the EU internal market. A coordinated EU approach is therefore considered essential, not only for market efficiency, but also for positioning the EU as a global leader in the development of sustainability reporting regulation (European Union, 2022).

The CSRD significantly expands both the scope, and the content requirements previously established under the NFRD. While the NFRD applied to primarily large, public-interest companies with more than 500 employees, the CSRD extends reporting requirements to a substantially larger group of companies. As a result, the number of companies subject to mandatory sustainability reporting is expected to increase from approximately 11,600 to 49,000 (KPMG, n.d.; European Union, 2022). In terms of content, the CSRD builds upon the requirements of the NFRD and introduces additional reporting obligations. Companies are required to include information about policies, risks and outcomes related to environmental, social and governance matters, as well as intangible assets such as human, social and intellectual capital. Furthermore, companies must describe their plans for achieving sustainability related objectives and ensure that their reporting is in line with the EU Taxonomy Regulation. Another significant addition is the mandatory application of the principle of a double materiality assessment, requiring companies to assess and disclose both how their activities impact the environment and society, as well as how sustainability related risks and opportunities affect the company's financial performance (European Union, 2022).

The transition from the NFRD to the CSRD entails significant changes in how companies should collect, structure and disclose sustainability information. Under CSRD, sustainability reports must include both qualitative and quantitative data, be forward looking as well as retrospective and cover the company's entire value chain (European Union, 2022). The reporting is also expected to consider multiple time horizons to reflect short-, medium-, and long-term sustainability impacts and risks. Another key change is the digitalization of sustainability reporting. Companies are required to prepare the management report and financial statements in XHTML format, apply digital tagging to sustainability information in accordance with a digital taxonomy, and publish sustainability reports in a digital format on a common platform. These requirements are intended to improve the accessibility, searchability and machine-readability of sustainability information, thereby improving its usability for investors and other stakeholders (European Union, 2022).

A consequence of the expanded scope of the directive is that CSRD also applies to certain non-EU companies (European Union, 2022). Companies that are not listed within the EU but generate a net turnover exceeding EUR 150 million within the EU and with either a large or listed SME subsidiary in the EU or an EU branch generating a net turnover exceeding EUR 40 million, will be required to comply with the CSRD from the financial year of 2028 and onwards. For EU-based companies, the implementation of the CSRD was planned to take place in three phases (IntegrityNext, n.d.):

- From the 2024 fiscal year for companies already subject to the NFRD
- From the 2025 fiscal year for large companies exceeding two out of the following three criteria:
 - 250+ employees
 - €25M+ balance sheet
 - €50M+ turnover
- From the 2026 fiscal year for listed small and medium-sized enterprises with less than 250 employees, a turnover under €50M and/or a balance sheet under €43M.

To operationalize the requirements of the CSRD, the European Sustainability Reporting Standard (ESRS) has been developed. These standards are designed to specify the content and structure of sustainability disclosures and thereby reduce ambiguity regarding reporting expectations (European Union, 2022).

1.1.3 Omnibus

The Omnibus initiative within the CSRD was introduced in response to growing criticism of the EU's rapidly expanding and increasingly complex sustainability regulatory framework (ASUENE Inc., 2025). Businesses and political leaders raised concerns that the scope, level of detail and implementation pace of the CSRD risked creating excessive administrative challenges, especially for small and medium-sized companies, and thereby undermining competitiveness and investment within the EU. Through the Omnibus Package, the European Commission aims to simplify, postpone, and better align key regulations, while maintaining the core goals of the CSRD.

The Omnibus Package represents a substantial adjustment of the CSRD (European Commission, 2025). Its most significant implication is the reduction in the scope of mandatory reporting. Approximately 80% of the companies initially expected to fall under the CSRD are now excluded, as it now only applies to companies with more than 1,000 employees and either a turnover of above EUR 50 million or a balance sheet exceeding EUR 25 million in total. This focuses the mandatory sustainability reporting on large corporations with more administrative capacity. The Omnibus Package also increases protection for small and medium-sized enterprises (SMEs) from indirect reporting pressure through corporate value chains. The introduction of a voluntary SME reporting standard reduces the information that CSRD-covered companies and financial institutions can request from suppliers and business partners with up to 1000 employees, which aims to prevent the transfer of compliance to smaller corporations.

For companies that remain within the scope, reporting requirements will be significantly simplified (European Commission, 2025). The European Sustainability Reporting Standards (ESRS) will be revised to reduce complexity, sector-specific standards have been removed and the need for external auditing will remain limited rather than requiring more thorough audits. Additionally, a two-year "stop-the-clock" initiative delays the reporting requirements for the companies that were originally scheduled to begin reporting in 2026 or 2027, allowing time for adaptation to the updated framework. From an economic perspective, the European Commission estimates that these changes will reduce annual administrative costs by approximately EUR 4.4 billion. Overall, the Omnibus Package signals a shift toward a more manageable and realistic approach to sustainability reporting under the CSRD (European Commission, 2025).

1.1.4 Corporate Sustainability Due Diligence Directive (CSDDD)

The Corporate Sustainability Due Diligence Directive (CSDDD) which came into force in July 2024, is a mandatory EU framework for responsible corporate conduct across global value chains (European Commission, n.d.). It requires companies to identify, prevent, mitigate and address environmental and human rights impacts connected to their operations, subsidiaries and business partners, making sustainability due diligence a legal obligation rather than a voluntary initiative. Additionally, large companies need

climate transition plans in line with the Paris Agreement's 2050 climate neutrality objective and the targets of the European Climate Law. The aim of the directive is to increase the protection of labor rights and the environment while increasing transparency and accountability in global business practices.

The CSDDD was introduced as a response to the limitations of voluntary sustainability initiatives, as the progress was uneven and different national laws created legal uncertainty within the EU (European Commission, n.d.). As global value chains have become more complex, companies are facing greater challenges in identifying and managing risks. A harmonized EU framework was therefore seen as necessary to ensure consistent standards across member states. The directive applies primarily to large EU companies with more than 1000 employees and a worldwide net turnover above EUR 450 million, as well as to large non-EU companies generating equivalent turnover within the EU. While small and medium-sized enterprises (SMEs) are not directly covered, they may be indirectly affected through value chains. Overall, the CSDDD strengthens the integration of sustainability risk management into corporate governance and aligns business practices more closely with EU human rights and climate objectives.

1.2 Aim & Outline

The aim of this thesis is to research how companies' structure and govern sustainability reporting practices in response to the CSRD. The study further examines on how sustainability-related data, supplier collaboration and information sharing are managed within supply chain networks. A supply chain perspective is used to analyze how regulatory requirements are put into operational practices and included in organizational structures and interorganizational relationships. Additionally, the study aims to increase the understanding of the challenges companies face when integrating sustainability reporting into their supply chain management, including difficulties related to coordination, data quality and cross-organizational collaboration. Through this, the thesis contributes to the research on how external regulatory pressures impact internal processes and supply chain governance in organizations, connected to compliance efforts, operational efficiency and sustainability reporting strategy.

This thesis starts by introducing the context of sustainability reporting and its evolving regulatory landscape, followed by the problem discussion and research questions that the study aims to answer. A theoretical starting point is then established together with relevant previous research on the topic. Key perspectives on sustainability reporting, supply chain management and governance are presented, which frames the analytical approach. The methodology chapter explains the research design and justifies the chosen methods for data collection and analysis. The empirical findings are then presented, showing how different companies structure and manage their sustainability reporting work. These findings are then analyzed using the theoretical framework to enable a deeper understanding of how regulatory requirements affect operational and interorganizational processes. Finally, the thesis concludes the findings by discussing their implications for theory and practice and identifies areas for future research.

2. Problem Discussion & Research Questions

The introduction of the CSRD brings a significant change in how companies are expected to work with and report sustainability-related information. While sustainability reporting traditionally has been seen more as a compliance driven exercise, the CSRD increases the level of detail, standardization and auditability required. This means an increased focus on building internal processes for collecting, managing and validating data going forward, rather than just presenting information externally. One of the main challenges is that a large part of the required data, especially related to Scope 3 emissions and other supply chain impacts, does not come from the focal company itself, but from suppliers and other external actors. Therefore, companies are highly dependent on their supply chains for data that is often difficult to access, verify and standardize. This creates new complexities, both in managing relationships with suppliers and with integrating sustainability data collection into existing systems and processes.

Companies also must develop new internal structures and governance mechanisms to handle these changed requirements. This includes coordination between different functions, alignment of responsibilities and ensuring that the data collected is usable for reporting purposes. This is difficult in practice, as supply chains often are fragmented, suppliers have different capabilities and maturity levels and companies have limited control over both upstream and downstream activities. This creates a gap between what the regulations require and what is feasible in practice. Because of this, companies often need to make trade-offs, for example between data accuracy and data availability, or between strict control and a collaboration with suppliers. These challenges lead to important questions about how sustainability reporting is implemented in practice, outside of what is described in the regulations.

While there is a growing interest in sustainability reporting and regulatory frameworks like the CSRD, there is still limited understanding of how companies implement these requirements, particularly in a supply chain context. There is therefore a need to research how companies structure their sustainability data flows, how issues connected to data quality and integration are handled and how they work with suppliers and internal functions to meet the new requirements. The study therefore seeks to contribute to a deeper understanding of how regulatory requirements are translated into operational practices and how companies balance data quality, collaboration and coordination challenges when integrating sustainability reporting into supply chain management. To fulfil this purpose, the following research questions will be answered:

1. How do companies' structure and manage sustainability-related data collection and information flows across supply chain networks?
2. What challenges do companies face in ensuring data quality, usability and integration when collecting sustainability data from suppliers?
3. How do companies design and manage collaboration with suppliers and internal functions to meet sustainability reporting requirements under the CSRD?

3. Theoretical Starting Points & Previous Research

This chapter presents the theoretical frameworks used in the study and outlines the key concepts and perspectives relevant to the research purpose.

3.1 Supply Chains as Interdependent Networks

Lambert and Cooper (2000) argue that supply chain management has created a shift from viewing companies as autonomous entities to networks of companies. Therefore, competition exists between entire supply chains, rather than between two companies. Because of this, the success of an organization depends on its ability to integrate and manage relationships with a broader network of suppliers and customers. Supply chains should therefore not be viewed as linear relationship chains, but as complex networks consisting of multiple companies linked together.

The aim of a supply chain is for all organizations involved, directly or indirectly, to fulfill customer demand, from the original source of raw materials to the final point of consumption. However, it is not possible to manage all possible connections across the network. Therefore, Lambert and Cooper (2000) make a key distinction between primary and supporting network members. Primary members are the companies that perform value-adding activities designed to produce outputs for specific customers or markets. Supporting members, however, provide resources, knowledge or assets but do not directly participate in value-adding processes. This distinction gives a more structured understanding of which actors are critical to supply chain performance.

Lambert and Cooper (2000) describe the structure of a supply chain network in three dimensions. The first one is the horizontal structure, which is the number of tiers included in the chain. The second is its vertical structure, the number of companies within each tier. The final dimension is the horizontal position of the focal company between the start of the chain and the final point of consumption, showing how far up or down in the value chain the company in question is. These characteristics affect the complexity of coordination within the supply chain and to which extent a company can integrate and manage relationships beyond its immediate tier-1 suppliers and customers. In practice, companies rarely manage all upstream and downstream connections. Instead, they focus on links considered particularly critical to their performance (Lambert and Cooper, 2000).

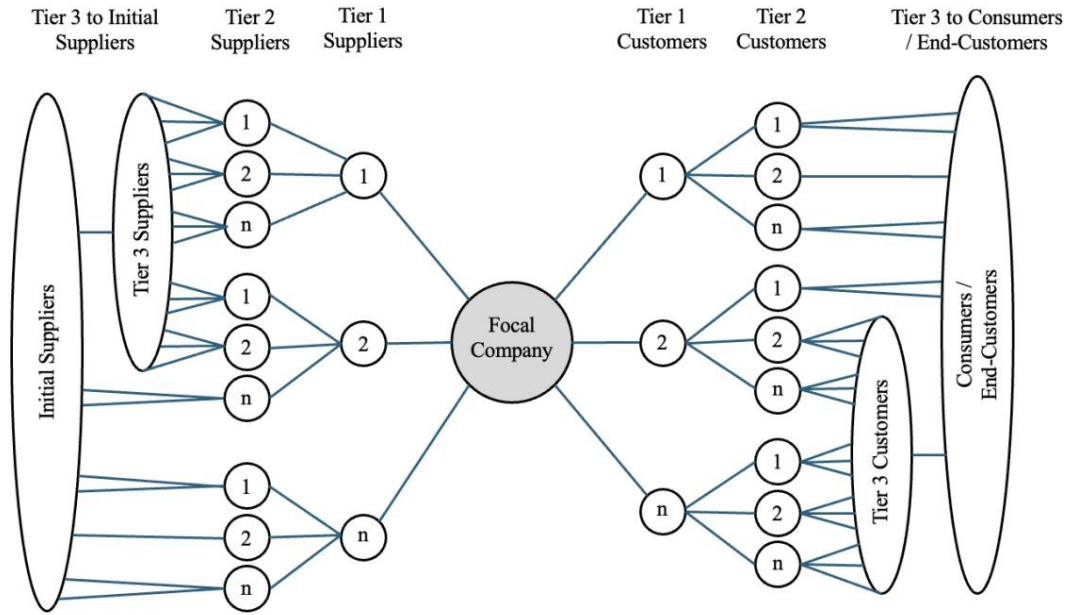


Figure 1. Supply chain network structure. Source: Lambert and Cooper (2000).

Further, Lambert and Cooper (2000) argue that effective supply chain management requires a shift from managing isolated functional silos to integrating activities into cross-functional processes. Instead of treating purchasing, manufacturing, logistics and marketing as separate functions, successful supply chains coordinate these activities through key business processes across functions. The key supply chain processes to coordinate include customer relationship management, demand management, order fulfillment, procurement, product development and commercialization, manufacturing flow management, customer service management and returns management. These processes consist of activities designed to create value for customers and other stakeholders, and they often include multiple companies within the network. Information flows play a central role in integration within these processes. Managing an integrated supply chain requires continuous and accurate information exchange, in particular when managing variation in demand and synchronizing production and distribution. Issues with information sharing can lead to inefficiencies such as excess inventory, delayed deliveries or misaligned production schedules. Structured information flow is therefore a critical component within supply chain management (Lambert and Cooper, 2000).

Not all interorganizational links are managed to the same degree according to Lambert and Cooper (2000). Their framework defines four types of business process links: managed process links, monitored process links, not-managed process links, and non-member process links. Managed links are actively integrated and coordinated by the focal company. Monitored links are less critical but are overseen to ensure appropriate management by other companies in the network. Not-managed links are activities the focal company is not actively involved in, or that is not critical enough to manage. Instead, they are managed by other companies in the network. Non-member links refer to connections between supply chain members and companies outside the supply chain that still might impact the performance. This differentiation shows that supply chain management is selective, requiring companies to strategically prioritize the managerial

attention and resources to the interorganizational links that are most critical to overall network performance (Lambert and Cooper, 2000).

The management of supply chains also depends on managerial and behavioral components. Lambert and Cooper (2000) identify nine management components, including planning and control systems, work and organizational structures, information and product flow facilities, management methods, power and leadership structures, risk and reward allocation, and organizational culture and attitudes. While physical and technical components often are more visible and easier to modify, managerial and behavioral components such as culture and power distribution are equally critical for effective integration. Misalignment between these components can create friction and inefficiencies within and between companies.

In conclusion, Lambert and Cooper (2000) mean that supply chains can be described as structured networks of interdependent firms connected through business processes and managed through a combination of technical and behavioral mechanisms. Successful supply chain management requires selective integration of key processes between critical members of the network, supported by appropriate governance structures and aligned management components.

3.2 Sustainable Supply Chain Management

Sustainability has become an increasingly important topic within supply chain management, largely because of the growing awareness of the environmental and social consequences of industrial production and consumption (Rajeev et al., 2017). Sustainable supply chain management (SSCM) refers to the integration of economic, environmental and social impact into supply chain activities and relationships. This includes how material, information and financial flows are managed within organizations, aiming to improve performance for both the focal firm and the supply chain as a whole. This perspective shows that sustainability cannot be addressed by the focal company alone but instead requires coordinated actions between all actors in the supply network. SSCM can also be defined as the management of companies and flows within the supply chain to ensure economic effectiveness while at the very least avoiding harm to environmental and social systems. SSCM therefore links the management of interorganizational flows to broader sustainability goals, and that supply chains must be managed for responsible outcomes across all three sustainability dimensions, not only for economic efficiency (Garcia-Torres et al., 2019).

However, sustainability in supply chains is difficult to define and put into practice, as it is based on societal and organizational values that can differ between actors (Meckenstock et al., 2015). Sustainability can therefore be interpreted in multiple ways, making it challenging to create consistent and effective approaches across the supply chain. The concept of SSCM has developed over time and is building on previous approaches such as Green Supply Chain Management (GrSCM) (Rajeev et al., 2017). The earlier approaches mainly focused on including environmental aspects into supply chain activities such as product design, sourcing, manufacturing, distribution and end-of-life management. While this was an important step, the scope was somewhat limited, as it focused more on environmental and economic aspects, and less on social issues. SSCM can therefore be seen as a broader and more comprehensive approach, where all three dimensions of the Triple Bottom Line are taken into account. Further, current

definitions of SSCM focus both on the integration of sustainability dimensions and the importance of cooperation and coordination between companies in the supply chain (Meckenstock et al., 2015). This includes managing material, information and capital flows while aligning interorganizational processes with social, environmental and economic goals to support long-term performance.

The increasing complexity and global nature of supply chains, where production often is distributed across multiple countries, has led to supply chains growing into multi-level networks with complex interdependencies, where competition occurs between entire supply chain structures, not just individual companies (Garcia-Torres et al., 2019). Managing sustainability therefore requires addressing both the structural complexity of global supply chains and the relationships between actors within them. Additionally, the focal companies are often holding significant power within the supply chains and have added pressure from stakeholders regarding sustainability performance because of that. These companies are expected to both take responsibility for their own operations, as well as for the upstream activities within their supply chains, despite there often being a lack of visibility into these networks.

This is a key challenge in SSCM, as companies are held accountable for outcomes outside of their direct control. This is especially true for global supply chains, particularly beyond first-tier suppliers, as the limited transparency makes it difficult for companies to trace the origin of materials and understand the social and environmental impacts of the products. Geographic and cultural distance between supply chain actors, for example when production is outsourced to developing countries, can create barriers to communication, alignment and monitoring. This increases the need for mechanisms to improve transparency and coordination across the entire supply chain network, as organizations are struggling to verify sustainability data and identify potential risks or violations within their supply chains. Traceability is therefore a key enabler of SSCM, as it allows companies to track and verify the history, location and processing of products across the supply chain. By improving the access to reliable information, traceability improves the transparency, risk management and verification of sustainability efforts, strengthening the ability of organizations to manage sustainability across complex global supply chains (Garcia-Torres et al., 2019).

The growing importance of this perspective is also reflected in literature, where the triple bottom line has become the most used approach in SSCM research (Martins & Pato, 2019). Earlier studies were mainly focused on environmental concerns, while more recent research increasingly integrates social aspects together with economic and environmental considerations, although the social dimension is still comparatively underrepresented. Further, SSCM is now largely viewed as a strategic and holistic approach rather than just an operational or compliance-driven activity. Sustainability has gone from being perceived as a constraint or cost factor to being considered as a driver of competitive advantage, where benefits such as cost savings, increased market share and stronger brand image can be reached through proactive sustainability efforts. However, even with this broader perspective, sustainability is characterized by trade-offs between environmental efforts, economic development and social aspects. These trade-offs are often complex, further complicating the implementation of SSCM in practice (Meckenstock et al., 2015).

There are several challenges with implementing SSCM in practice (Rajeev et al., 2017). Supply chains are often spread out across multiple countries, where regulatory

standards can differ significantly. This can result in companies responding to stricter sustainability regulations by for example moving activities connected to higher emissions to regions with less strict regulations, which means that the overall environmental and social impact is not necessarily reduced, it has just shifted geographically. Differences in data availability, regulatory frameworks and organizational practices between the companies can also increase the complexity in coordinating sustainability efforts across the supply chain. Addressing sustainability challenges therefore requires collaboration between many different actors, and a deep understanding of how economic, environmental and social aspects are interconnected across the entire network. Further, sustainability in supply chains relies heavily on how information is exchanged and how different actors coordinate their efforts (Rajeev et al., 2017).

SSCM can further be described as a so-called “wicked problem”, meaning that it is difficult to clearly define and does not have a single optimal solution (Meckenstock et al., 2015). There are often multiple stakeholders involved in these problems, with conflicting opinions, complex relationships and solutions that might have unintended consequences. In supply chains, different actors may have fundamentally different understandings of what defines sustainability, which complicates coordination and decision-making. For example, companies at different levels of the supply chain might prioritize different aspects of sustainability depending on their economic situation, cultural context or role in the chain. This can lead to misalignments, where what is considered sustainable in one part of the supply chain could be perceived differently in another. Therefore, achieving a shared approach to sustainability is a central challenge in SSCM (Meckenstock et al., 2015).

Furthermore, coordination and collaboration between supply chain actors are central themes in SSCM research, especially since sustainability challenges often involve multiple stakeholders and interdependent processes (Martins & Pato, 2019). In addition, performance measurements using metrics and indicators plays an important role in supporting strategic and operational sustainability decisions within the supply chain. However, several gaps remain in this area, despite the growing maturity of the field. For example, risk management practices have been relatively excluded from sustainability perspectives so far, and some supply chain functions such as reverse logistics and closed-loop supply chains, have not been properly studied in relation to social sustainability, according to Martins & Pato (2019). Additionally, there is still a need for more research focusing on sustainability efforts in specific industries and on enabling factors such as innovation, knowledge and IT systems in SSCM.

Overall, the complexity of SSCM is both driven by structural factors such as geographical fragmentation, as well as by social and time-related dimensions. These include different stakeholder perspectives, complexity in relationships across the supply chain and the uncertain and long-term nature of sustainability outcomes. Together, these dimensions explain why implementing SSCM requires more than just technical solutions, and requires continuous negotiation, learning and adaptation between the supply chain actors (Meckenstock et al., 2015).

3.3 Sustainability Reporting Challenges and Collaboration in Supply Chain Networks

The CSRD fundamentally transforms sustainability reporting from an internal to a network-dependent process. Jokinen et al. (2025) describes how the requirement to report Scope 3 emissions in line with the directive makes companies structurally dependent on upstream and downstream actors, primarily for emissions data. Sustainability reporting therefore becomes an interorganizational collaboration rather than internal in the focal company. This perspective is confirmed by Niemann et al. (2025), who argue that the CSRD creates trickle-down effects in value chains. Even companies that are not directly obligated to perform sustainability reporting are indirectly included in reporting processes through data requests from larger reporting companies in their value chain, creating a "multiplier effect" (Lilja, 2026). This occurs since reporting companies have to collect and disclose sustainability data from their entire value chain, including Scope 3 emissions. Therefore, Jokinen et al. (2025) and Niemann et al. (2025) suggest that sustainability reporting under the CSRD goes beyond individual companies and must be understood as a structurally embedded network process.

Ahern (2023) states that even though most small and medium enterprises (SMEs) are not directly required to report under the CSRD, value chain reporting obligations mean that larger companies request sustainability information from upstream suppliers, downstream distributors and service providers. Therefore, the CSRD has a large indirect impact on SMEs which are central to the European economy as they take up approximately 99% of EU enterprises. Further, Ahern (2023) identifies that many SMEs lack the technical expertise and financial resources needed to perform the requested reporting requirements. Lilja (2026) states that SMEs also often lack the established monitoring systems and specialized sustainability expertise needed. As a result, focal companies are often forced to rely on secondary data and industry averages in their sustainability reports. This increases the uncertainty in reported emissions and reduces the ability to accurately identify company-specific sustainability improvements within the supply chain.

However, there is an uncertainty about what data is required and how to measure it, leading to a large administrative burden connected to sustainability reporting for SMEs (Niemann et al., 2025). There is also a lack of harmonization in the data demanded. SMEs often receive inconsistent data requests from different business partners, leading to increased handling costs and inefficiencies in the value chain. Therefore, even though the CSRD aims to improve comparability and standardization, the early implementation stages can in practice create fragmented reporting pressures on SMEs. This shows that supply chain collaboration around sustainability reporting is not only a data exchange problem, but also a coordination and standardization challenge (Niemann et al., 2025).

Jokinen et al. (2025) found that sustainability work in supply chain networks tends to be centralized. The focal company usually has the most central position, acting as an information broker and the main initiator of reporting activities. Further, Jokinen et al. (2025) discovered that overall network density, referring to the connections within the network, is remarkably low. Instead, it is shown that collaboration often exists through relationships between the focal firm and individual suppliers rather than coordinated, multicompany network initiatives. This indicates that network initiatives could be used

more efficiently by increased knowledge sharing, shared development programs and potentially also shared resources within the network. These types of collaborative actions could reduce the bottleneck risk of sustainability efforts mainly depending on the focal company and contribute to further innovation within the supply chain. Therefore, Jokinen et al. (2025) shows that sustainability integration on the network level is underdeveloped.

Sustainability reporting is evolving from a regulatory requirement to a key aspect for competitiveness and supplier evaluation (Lilja, 2026). Even though the Omnibus simplification package reduced the formal scope of CSRD, excluding a large part of the companies previously affected, market forces such as customer demand and international competition continue to motivate companies to maintain high levels of sustainability transparency. Further, CSRD contributes to improved standardization and comparability of sustainability information. Increasing transparency and reducing information asymmetries with structured and transparent sustainability reporting can strengthen companies position toward customers and investors. Additionally, sustainability is increasingly being integrated into sourcing processes, with companies using it as a formal criterion in supplier evaluation together with traditional metrics such as cost and quality. This development also shows a shift in supplier relationships, where transactional interactions are being replaced by more collaborative, long-term partnerships to ensure reliable data sharing and continuous improvement in sustainability performance within the value chain (Lilja, 2026).

Recent research further highlights that sustainability reporting is highly dependent on the quality and usability of the data, not only the availability. Ho (2025) emphasizes that effective supply chain sustainability work requires the development of “decision-grade data routines” where information is reliable, comparable and usable in operational decision-making. Data routines, in this context, refer to the processes in which data is collected, validated, standardized and integrated into the organizational workflows. “Decision-grade” highlights that the data must reach a certain level of consistency and quality to support operational decisions, instead of only meeting external reporting requirements. This requires the data to be reliable, meaning that it is accurate, verifiable and based on consistent measurement methods between actors in the supply chain.

Further, it must be comparable, which requires standardized definitions, metrics and reporting formats so that data from different suppliers, regions or time periods can be compared and analyzed. The data also needs to be usable, meaning that it is accessible, delivered on time and integrated into decision-making processes such as production planning or supplier evaluation (Ho, 2025). However, sustainability data in multi-tier supply chains is in practice often fragmented, inconsistent and difficult to verify, especially beyond tier-1 suppliers, showing that even when data is available, it may not be actionable. As a result, sustainability reporting becomes both a data collection issue as well as a data integration and usability challenge in supply chain processes (Ho, 2025).

To address the fragmentation of sustainability reporting in supply chains, Ho (2025) suggests a shift from firm-centric initiatives to a broader perspective of network governance, where Scope 3 traceability and emissions data exchange are treated as shared infrastructure rather than an add-on to reporting processes. The development of “decision-grade data routines” is therefore central to enable sustainability data to be

continuously collected, validated, and integrated into operational decision-making, rather than just reported on. In addition, Ho (2025) highlights that increased collaboration within the supply chain does not necessarily improve sustainability outcomes. Instead, the concept of “designed collaboration density” suggests that collaboration should be strategically structured rather than evenly expanded. High levels of coordination between all actors in the supply chain might lead to increased costs for monitoring and negotiation, which could potentially outweigh the benefits. Prioritization and resource allocation are therefore important aspects in the collaboration strategy, as focal firms cannot introduce extensive requirements on all suppliers simultaneously. Instead, collaboration efforts should be focused on suppliers that are either strategically critical, or that are considered to be of particular high-risk (Lilja, 2026).

To integrate sustainability initiatives into supply chain operations, Ho (2025) proposes starting by establishing robust data routines and aligning the incentives between the involved parties, often by embedding sustainability requirements into the supplier relationships. Further, the level of collaboration should be adjusted to support effective implementation and finally, these practices should be integrated into core planning and control systems. While the initial implementation phase of such initiatives is resource-intensive, costly and could strain the relationship with certain suppliers, it creates consistency and standardization in the reporting work over time (Lilja, 2026). The challenges with sustainability reporting are also dynamic and continuously evolving. Lilja (2026) shows that many challenges are occurring particularly in the early stages of CSRD implementation, where processes for data collection and supplier collaboration are still being developed. Over time, however, these processes can become more structured and contribute to improved transparency and coordination (Lilja, 2026).

Digital tools and platforms also play a significant role in managing sustainability data and supplier interaction (Lilja, 2026). Streamlining data collection through digital platforms gives the focal company a better overview of their entire value chain, allowing for long-term operational efficiency and risk reduction. The implementation of digital sustainability assessment platforms, such as EcoVadis and IntegrityNext, is identified as a key step to automate data collection and streamline data collection across the different actors in the supply chain. Ho (2025) further emphasizes that digital infrastructure and traceability is a key aspect for improving data quality and supply chain transparency. However, the effectiveness depends on how well it is integrated into existing processes and governance structures, as digitalization works as an enabler rather than a separate solution.

Altogether, the literature shows a gap between the theory behind supply chain management and how sustainability reporting is currently implemented in practice. While supply chains are described as interdependent networks requiring integration, coordinated processes, and aligned management (Lambert and Cooper, 2000), sustainability reporting under the CSRD seems to be implemented through fragmented data requests focused on the focal firm and low network density (Jokinen et al., 2025; Niemann et al., 2025). Further, these challenges are not only related to data availability, but also to the quality, usability and integration of sustainability data within operational processes (Ho, 2025). At the same time, limitations in supplier capabilities and the need

for prioritization create constraints for effective collaboration within the network (Lilja, 2026).

As a result, sustainability reporting becomes a complex coordination and governance issue, where companies need to balance data quality requirements, supplier collaboration and resource limitations, while developing appropriate governance structures and information flows. This includes establishing decision-grade data routines, aligning incentives across actors in the supply chain and designing collaboration in a way that supports implementation without creating excessive coordination costs. However, these structures are often underdeveloped, especially in the early stages of CSRD implementation, where processes are still emerging, placing a significant strain on both the focal firm and their suppliers. A central problem can therefore be identified: how can sustainability reporting requirements be effectively integrated and managed within complex supply chain networks without generating excessive administrative burdens, misaligned incentives and coordination inefficiencies? Addressing this problem requires a deeper understanding of how focal companies structure and govern sustainability-related processes, how they manage supplier collaboration and data exchange and how information flows are organized across different tiers of the supply chain.

4. Method

This study uses a qualitative research design, combining a literature review with semi-structured interviews. The chosen approach aligns with the study's aim to reach an in-depth understanding of how sustainability reporting, and the challenges and opportunities it brings related to the supply chain, is described in existing research and how it is implemented in practice by different companies. By combining theoretical insights with empirical data, a comparison between established academic perspectives and organizational practices can be made.

4.1 Literature Review

The literature review aims to establish a theoretical foundation for the study and to identify key concepts and frameworks relevant to the topic. Searches were conducted in academic databases such as Google Scholar and Scopus. Keywords related to supply chain networks, sustainability reporting and regulatory compliance were used in the search. Examples of search terms include “sustainable supply chain management”, “sustainability reporting” and “CSRD challenges”. The review primarily includes peer-reviewed journal articles in areas such as supply chain management, sustainability reporting and network theory. The selection of literature was based on the relevance to the research questions and purpose of the study, academic rigidity and, for literature related to emerging regulations, also recency.

4.2 Semi-Structured Interviews

To gain further qualitative insights, semi-structured interviews were conducted with representatives from multiple relevant companies. In semi-structured interviews, an interview guide consisting of pre-written questions on the relevant topics are created, but with flexibility of which questions are asked and in which order during the interview (Bell et al., 2022). This allows for adjusting the questions based on the answers to get the most relevant insights, for example by asking follow-up questions on unexpected topics raised. This method was chosen as it allows for flexibility in exploring the participants' experiences while still maintaining a consistent thematic structure across interviews, to allow for cross-case comparability (Bell et al., 2022).

The interview guide was developed based on the study's research questions. Rather than translating these directly into specific interview questions, the guide was organized around central themes to avoid early narrowing of the research focus, allowing relevant themes to emerge during the data collection process (Bell et al., 2022). The themes include:

- Implementation of sustainability reporting requirements in supply chains
- Cross-functional collaboration connected to sustainability reporting within organizations
- Interorganizational coordination and data exchange
- Challenges related to sustainability reporting and regulatory compliance.

The questions were formulated to be open-ended and non-leading to capture the participants' own perspectives and experiences. Effort was also made to use language that was relevant and understandable to the respondents, ensuring that questions reflected their professional context. Further, different types of questions were included, such as introductory, follow-up and probing questions, to encourage elaboration and deeper reflection (Bell et al., 2022). Finally, each interview included a closing question that allowed the participant to raise additional aspects not covered during the interview, to help capture relevant perspectives not included in the interview.

The questions in the interview guide were also adjusted based on the company and the role of the respondent, to ensure relevance to their expertise. Some participants did for example does not work with scope 3 reporting, and in those cases the questions connected to scope 3 and the supply chain were left out, and the focus was instead shifted to other relevant areas. Further, the questions were adjusted based on the company's industry and maturity level of sustainability reporting. For example, for companies currently preparing for an upcoming CSRD implementation, more focus was put on the implementation phase, while for companies with multiple years of CSRD reporting, a bigger focus was put on the strategic impact of the directive. Prior to the interviews, comprehensive preparations were made to get a deeper understanding of the sustainability work at the companies by studying their previous sustainability reports to adjust the questions to be as relevant as possible for respective companies. The interview questions were sent out to the respondents prior to the interviews to allow for preparation and reflection to get as comprehensive answers as possible. A general sample of the interview questions can be found in the appendix. However, the exact questions given to each respondent varied depending on the company and the interviewee.

A purposive sampling strategy was used, where companies were selected based on their relevance to the research purpose (Bell et al., 2022). Aspects considered included for example the level of maturity in sustainability reporting, the company's position within the supply chain, their exposure to sustainability reporting requirements and company size. The companies interviewed represent a broad range within these aspects, as they vary in size, industry, maturity level etcetera, allowing for a broader analysis. To some extent, snowball sampling was also used to get access to multiple perspectives within the same company, where the participant recommended other people within the organization who could contribute with other relevant views. For example, when a participant did not have insight into the supply chain and scope 3 perspective, they initiated the contact with another person within the organization specialized in this area for an additional interview, to get as comprehensive understanding as possible.

All interviews were conducted using Microsoft Teams. There are multiple advantages with using digital video software for interviews according to Bell et al. (2022). The flexible nature makes it easier to schedule and accommodate compared to face-to-face interviews, while still getting the visual aspect of a physical interview, compared to for example a phone interview. Through the video, non-verbal communication can be expressed, adding an additional layer to the information extracted. Further, it is more time and cost effective as it reduces the travel need to and from a physical interview. This aspect was especially crucial for this study, as the participants interviewed were based in multiple different cities across Europe, which would have made the travel time consuming, costly and likely would have negatively impacted the selection of

companies interviewed. All interviews were transcribed using the built-in transcription function in Microsoft Teams. There are multiple advantages to transcribing the interviews according to Bell et al. (2022), as it increases the accuracy of the results compared to relying on the memory of the interviewer and allows for deeper and repeated examination of the answers. These transcriptions were then used as the source for chapter 5, where the empirical results are stated.

4.2.1 Companies interviewed

The following table provides an overview of the companies and participants interviewed in the study.

Company Name	Operating Industry	Interviewee Role	Company Size	Required to report according to CSRD
Vattenfall	Utility and power sector	Head of Sustainability & Investor Relations Officer	Large with public interest	2025 (fiscal year 2024)
Lantmännen	Agriculture and Food Industry	Sustainability Manager & Senior Sustainability Specialist	Large	2028 (fiscal year 2027)
Company X	Plastic Packaging	Group Sustainability Controller & Sustainability Manager	Large multinational group	2028 (fiscal year 2027)
Scandi Standard	Food Industry	Group Sustainability Manager	Large, publicly listed multinational group.	2026 (fiscal year 2025)

Table 1. An overview of the companies interviewed.

The aim in the selection of companies was to capture a variation in how organizations work with implementation of the CSRD, particularly connected to governance structures, value chain complexity and maturity level in sustainability reporting. Vattenfall was included as a company representing a very mature organization in terms of sustainability governance and reporting practices, because of its size and early exposure of sustainability reporting requirements and CSRD. Vattenfall therefore provides insights into how established sustainability reporting practices are adapted to

meet CSRD demands, with a focus on integration across the value chain and the formalization of governance processes.

Lantmännen was selected to research how CSRD is implemented in a cooperative ownership structure, combined with an international value chain. Further relevance is provided by the fact that the organization is not yet required to report under CSRD but is preparing for the upcoming implementation through its subsidiaries. This makes it possible to study the interpretation and preparation steps of the directive. The company therefore contributes with the perspective on how governance complexity and ownership models impact the structuring of sustainability reporting and coordination.

Company X, a large privately owned group in the plastic packaging sector, was included to provide insight into CSRD implementation in a non-listed, private group with subsidiaries both inside and outside Europe. They are operating in an industry impacted by increased sustainability and regulatory pressure and contribute with a perspective on how ownership structure and market positioning shapes the approach to sustainability reporting connected to resource allocation, prioritization and supply chain considerations. The company has requested to be anonymous in the study and will therefore be referred to as “Company X”.

Scandi Standard was selected to capture the early-stage implementation of CSRD in a listed company. As they recently published their first CSRD-aligned report, the company provides insight into the challenges connected to transitioning from previous sustainability reporting frameworks to full CSRD compliance. The case gives increased understanding for preparatory activities, such as internal test reporting and gap analyses, and how organizations handle new requirements under regulatory uncertainty. Therefore, it contributes with a perspective on CSRD implementation in the initial phase, where processes and structures are still being developed.

4.3 Ethical Considerations

Ethical principles have been considered during the research to avoid any potential negative impact of the study. Bell et al. (2022) raises four main principles connected to ethical considerations: informed consent, respecting privacy, preventing deception and avoiding harm. To reach informed consent, all interview participants were informed about the purpose of the study, the topic of the interview and that their participation was completely voluntary prior to the interview. Full consent was also given before starting the recording and transcription of the interview, used to ensure accuracy in the reported results. This also ensured respected privacy, together with the fact that all interviewees, as well as their organization, are completely anonymous in the study. To avoid deception, complete transparency about the topic of the study, the role of the researcher and how the data collected during the interview would be used was given before the interviews. Further, any harm to the participants was avoided by treating the interviews with respect and ensuring the interviews felt safe by for example avoiding any personal or sensitive questions.

4.4 Reflection

A limitation of the study is the number of companies included in the empirical data collection. Even though the companies selected differ from each other in aspects such

as industry, ownership structure, maturity level and exposure to CSRD requirements, the relatively small sample means that the findings cannot be generalized to all organizations facing CSRD implementation. Additional interviews with a larger number of companies from other industries or with different organizational characteristics could potentially have contributed with different perspectives.

Another consideration regarding the method is the balance between width and depth in empirical study. An alternative approach could have been to focus on a single company and perform a more in-depth case study, including a larger number of interviews with participants from different organizational functions and potentially also observational studies of the work in practice. This could have contributed with a deeper understanding of internal processes, governance structures and collaboration challenges in regard to CSRD implementation. However, the chosen method involving multiple companies made it possible to compare different organizational factors and approaches, which was considered important for getting a comprehensive understanding of how the challenges differ depending on the organizational context. There was however a trade-off between receiving broader, comparable insights and a deeper understanding of one individual case.

Additionally, there were limitations regarding the availability and willingness of companies to participate in the empirical data collection. Although the goal was to include organizations from different industries, with different ownership structures and varying levels of CSRD maturity, not all companies contacted were willing or able to participate in the study. The companies included in the empirical study were therefore partly selected based on accessibility.

Further, the use of semi-structured interviews also created certain limitations. Since the findings depend on the respondents' own descriptions and interpretations of their organizations work, there is a risk that some aspects were not fully expressed in the interviews. This was to some extent avoided by ensuring that two representatives were interviewed independently of one and other from most of the companies interviewed. This way, the information collected was more comprehensive, involving more than one perspective. The respondents may also have presented their organizations in a more favorable way, particularly considering that sustainability reporting is connected to regulatory compliance and external stakeholder expectations. To reduce this risk, efforts were made to ask open-ended and non-leading questions and to include participants with different roles and perspectives.

5. Empirical Findings

In the following chapter the findings from the empirical study are presented.

5.1 Sustainability Reporting and Value Chain Governance at Vattenfall

This section presents the empirical findings from interviews with the Head of Sustainability as well as the Investor Relations Officer at Vattenfall. Vattenfall is a large, state-owned multinational energy company with their headquarters in Sweden. The company is operating in several European markets in areas such as electricity generation, distribution and energy trading, with a strong focus on fossil-free energy production. Vattenfall has been obliged to report in accordance with CSRD since the fiscal year 2024, as one of the first companies affected by the directive.

5.1.1 CSRD in relation to business strategy

For Vattenfall, the implementation of CSRD has primarily been an administrative shift, rather than a change in organizational strategy. Sustainability has been deeply integrated into the Vattenfall's strategic objectives for many years and as a result, the directive has not significantly affected how the company is governed or how strategic priorities are made. While the company has already been reporting on sustainability issues for many years, the directive requires these issues to be described and documented differently than before. The main impact of CSRD is therefore in the formal requirements, how information should be documented and presented, rather than in new strategic priorities or operational changes. As Vattenfall already were conducting extensive sustainability reporting in line with the previous frameworks, such as for example GRI, CSRD did not require major changes in underlying practices. Instead, CSRD increases the transparency around what the company is already doing, rather than forcing new initiatives.

In this sense, CSRD has mainly affected the administrative aspect of reporting, reshaping the compliance processes at Vattenfall rather than changing the underlying sustainability practices. CSRD is described as a regulatory "stick" intended to push companies toward sustainable business models but that the initial implementation resulted in excessive administrative burden and complexity, leading to duplication of information and overly technical reporting. This has shifted focus from sustainability as a strategic tool to sustainability as a compliance exercise. However, there seems to be a broader market shift where sustainability is driven by business value and competitiveness rather than by reporting obligations. At the same time, the directive has strengthened the strategic visibility of sustainability issues at higher levels in the organization, such as the board and top management, even if it has not changed the direction of the strategy.

5.1.2 Internal governance and cross-functional integration

The introduction of CSRD has clarified and strengthened internal governance structures related to reporting. While the sustainability function is still responsible for data collection, content and expertise, the Finance department at Vattenfall has taken over the responsibility for ensuring compliance with CSRD and ESRS requirements and is responsible for the final report. The Chief Financial Officer now formally oversees the reporting process and has the board-level accountability. However, several functions are actively involved in the reporting process, including Finance, Sustainability, Risk, Legal, and Human Resources. To collect the necessary sustainability data, multiple functions input their respective data through an established system which reduces the need for manual input. A smaller core team coordinates the process, supported by a larger cross-functional project group.

Although this multi-functional structure is now more formalized, Vattenfall already had a well-developed cross-functional collaboration because of their long history of sustainability and financial reporting. Therefore, CSRD did not fundamentally change the way of working internally. However, the Head of Sustainability highlights that for many other companies, who have not previously worked cross-functional to the same extent, CSRD has enabled cross-functional integration, forcing organizations to break down silos and coordinate between departments. In that way, CSRD has had a structural impact on many companies beyond the reporting itself.

Despite the already established cross-functional collaboration, there are challenges connected to coordination and timing. The data collection process is both complex and time-consuming, involving multiple layers of contacts across the organization. Ensuring that all data is delivered on time requires significant planning and coordination, especially in a large company like Vattenfall. Furthermore, the increased number of data points required under CSRD has created a need for improved systems and digital tools to manage data more efficiently and reduce the risk of errors.

5.1.3 Supply chain governance

One of the main challenges with sustainability reporting to Vattenfall is responsibility of the entire value chain, since the most significant sustainability risks in their field often are located upstream in the supplier network rather than in their own operations. With the complexity of global supply chains, the Head of Sustainability raises that full control over the impact of the value chain is impossible. Instead, Vattenfall uses a risk-based approach to supplier governance. They categorize areas based on risk exposure, identifying high-risk categories such as minerals and metals used in solar panels, batteries, and IT equipment, as well as labor-intensive products. The depth of the monitoring depends on the risk classification of the supplier.

For high-risk categories, Vattenfall aims to map the supply chain as far as possible upstream, which varies depending on product. Sometimes this goes as far as the mining level and might require on-side audits to ensure that the correct information is given. Low-risk suppliers however, such as consultants in Northern Europe, might only require basic screening. The evaluation of suppliers is therefore adaptive, and continuous transparency and cooperation are a necessity. The Head of Sustainability highlights that there never is an absolute guarantee for sustainability within the value

chain, but that Vattenfall aims for sufficient transparency to identify major risks and implement mitigation measures when needed. The primary focus in governance is the upstream part of the supply chain where they can impact through requirements, audits etcetera, and the downstream aspects are generally more difficult to impact as it requires nudging customers to change their behavior. This is a challenge in CSRD reporting, where the downstream impact comes with higher uncertainty and lower data availability compared to internal operations and upstream activities.

When sustainability related issues are detected in audits, Vattenfall initiates a Corrective Action Plan. Suppliers are then given clear requirements and timelines for improvement, which either needs to be completed before the start of the contract or, for more long-term corrective actions, needs to be actively worked on going forward or else the contract will get terminated. Vattenfall prefers corrective engagement over immediate contract termination, particularly when suppliers demonstrate willingness to learn and adapt. One example of a case in which Vattenfall has worked closely with suppliers in high-risk regions was when investing time and effort in education and improvement in sustainability work concerning coal sourcing in Colombia. Close collaboration with suppliers and local communities was then necessary to address and improve sustainability-related challenges. However, in situations where suppliers show no interest in change, or where improvements are not made, the relationship may be terminated. In certain cases, particularly when only few alternative suppliers exist globally, Vattenfall may simultaneously work with the existing supplier while developing alternative sourcing strategies. Supplier governance therefore requires continuous evaluation, negotiation and strategic trade-offs between sustainability performance and business needs.

5.1.4 Industry collaboration

Industry collaboration is described as almost a necessity to create sufficient pressure on global suppliers to improve sustainability work and data availability. Vattenfall participates in various collaborative initiatives related to areas such as fuel and mineral sourcing, aiming to harmonize demands and increase collective negotiation power. Coordinated action between companies increases the pressure for change and facilitates shared standards and expectations. In global supply chains, individual companies often lack sufficient influence on their own and collaboration therefore becomes a governance mechanism in itself.

5.1.5 Transparency and reporting as a competitive advantage

In the selection process of suppliers, formal sustainability reporting is not a requirement. Instead, Vattenfall prioritizes transparency and willingness to share the relevant data. However, sustainability reporting can act as a competitive advantage for suppliers, as publicly available sustainability information reduces the administrative burden and improves trust. Transparency also contributes to improved quality, stronger stakeholder relationships and increased attractiveness as both an employer and business partner. Vattenfall has also received positive external feedback on their advanced sustainability reporting efforts, indicating that strong reporting capabilities might contribute to reputational advantages and positioning in the market. The Head of Sustainability also argues that the rationale for sustainability has shifted in recent years.

Whereas reporting obligations previously served as the main driver, sustainability is now increasingly linked to competitiveness, resilience, and long-term value creation. Companies are allocating more resources to sustainability today than before, but they frame it in terms of business value rather than compliance.

5.1.6 Future challenges

Looking three to five years ahead, several challenges are identified. The Head of Sustainability has a balanced perspective on the Omnibus simplification package. On one hand, the reduction of administrative complexity can be seen as positive, arguing that the initial CSRD framework was overly detailed and burdensome. Simplifying the reporting requirements can therefore help shift the focus to strategic sustainability work rather than excessive reporting compliance. On the other hand, concern is expressed about the raised reporting thresholds, since this excludes a significant number of mid-sized companies from mandatory reporting. This may decrease the systemic impact that CSRD originally aimed to achieve, particularly in targeting companies beyond the largest organizations, who are already reporting to a big extent. The evolving and uncertain regulatory landscape itself is also a key challenge. Companies continuously need to monitor the changes in requirements and adapt their reporting strategy accordingly, which creates uncertainty and makes long-term planning difficult.

There is also concern that sustainability reporting may become more fragmented. Without a clear standard, smaller companies may receive multiple, uncoordinated data requests from large customers in their value chain, leading to increased administrative burdens instead of reducing them. At the same time, there is an expectation that increased standardization through CSRD will reduce complexity in the long run, increasing the comparability for stakeholders. Further, the effectiveness of sustainability reporting depends on whether companies treat the governance work as a strategic tool or mainly a compliance requirement. The Head of Sustainability emphasizes that sustainability should be a driver of innovation and long-term competitiveness rather than a box-ticking exercise and that developing a sustainable business model is essential for long-term resilience in a rapidly changing global environment. While reporting requirements initially worked as a regulatory driver pushing companies to address sustainability issues, their ability to turn these efforts into business value and competitiveness will determine their future success.

5.2 CSRD Implementation at Lantmännen

This section presents the empirical findings from an interview conducted with the Sustainability Manager and Senior Sustainability Specialist at Lantmännen. Lantmännen is a large, farmer-owned cooperative working internationally with agriculture, food and bioenergy. With operations in more than 20 countries, the group has a unique governance structure, combining industrial activities with cooperative ownership. Lantmännen will be required to report under CSRD from the fiscal year 2027, included in the report published in 2028. This is because of the company's legal structure as a cooperative, where several of its large subsidiaries fall within the directive's scope. Instead of each subsidiary reporting individually, they will be able to refer to the group-level report.

5.2.1 CSRD in Relation to Business Strategy

CSRD has had a significant impact on Lantmännen's sustainability strategy. Initially, the additional reporting efforts were the central focus, but as the necessary implementation of CSRD requirements started, it has also impacted the strategic decisions of the company. In particular, the double materiality assessment is highlighted as a key tool for structuring the sustainability work. Through this, the company is required to identify relevant sustainability issues and ensure that proper policies and monitoring mechanisms are in place to manage these. This has strengthened the connection between sustainability work and general business governance. Furthermore, CSRD is described as a driver for integrating ESG considerations into the broader business strategy. Sustainability work has, through CSRD, shifted from being relatively fragmented to becoming more formalized and structured. The Sustainability Manager emphasizes that they view CSRD as a mechanism that increases the long-term sustainability efforts and not only an administrative burden.

Further, CSRD has contributed to a growing involvement from finance and business control functions, increasing the formalization of sustainability data. While Lantmännen has reported on sustainability for many years, CSRD has increased the management attention on the topic and set an expectation to create structured routines and controls similar to financial reporting. The implementation has also benefited from prior work related to other sustainability frameworks, such as Science Based Targets, where overlapping data and reporting processes have created synergies. The company was affected by the postponement of CSRD reporting requirements following the Omnibus proposal. This was perceived positively as it provided additional time and clarity for the implementation, while also reducing the scope of the previous reporting requirements, which was seen as overly excessive.

5.2.2 Internal governance and cross-functional integration

CSRD has significantly influenced the internal governance structures and organization of the sustainability work within the company. One main outcome is increased cross-functional collaboration between departments such as sustainability, finance, HR, compliance, procurement and risk. While the final sustainability report is owned by the finance function, the responsibility of conducting it is a shared responsibility between finance and the sustainability function. This further reflects an increased integration of sustainability data into financial systems and processes.

The data collection work is decentralized, and the different business units are responsible for reporting data through different systems depending on the data type. At group level, this data is then aggregated, processed and quality-checked prior to disclosure. A challenge has been harmonizing the different perspectives on data across functions. Previously, sustainability data has been less standardized than financial data, leading to different interpretations of data ownership, quality requirements and reporting practices. However, there has been a strong willingness to collaborate within the company, and the challenges have mainly been related to coordination and structure rather than resistance. Further, Lantmännen has decided to integrate CSRD reporting into their existing financial reporting system, IBM Cognos, and build capabilities internally, rather than relying on external consultants or implementing new systems.

This is to ensure that the knowledge and competence exist and stays within the company.

Their digital reporting tool, IBM Cognos, has been replacing earlier standalone solutions. This allows the company to use established financial reporting structures, internal controls and organizational routines when handling sustainability data. Instead of creating parallel systems, sustainability data is treated similarly to financial data, where different company functions report into a centralized system. The company's central sustainability function has a coordinating role rather than executing all activities, and the operational work is split between business units across approximately 20 countries. This creates a need for alignment in measurement approaches, standards and reporting practices across the organization.

5.2.3 Supply Chain Governance

The governance of the supply chain is based on a risk-oriented approach, where risk identification is made through double materiality assessments, which are closely linked to the due diligence processes in the supply chain. Suppliers are evaluated based on factors such as geographic risk, raw materials and product categories. This assessment combines both top-down and bottom-up approaches. From a top-down perspective, country-level indicators, such as corruption indices and World Bank indicators, and product-related risks are used to identify high-risk areas requiring additional monitoring. From a bottom-up perspective, responsibility is included in the procurement processes, where the purchase units are expected to identify and manage risks in their supplier relationships. This risk identification work is supported by supplier self-assessments and internal processes, such as the "Responsible Sourcing Process", which ensures a consistent approach to compliance and sustainability across the organization. Further, consistent tools and approaches are used across the business units, for example shared audit platforms such as Sedex and specific group-level requirements for high-risk raw materials, such as palm oil, where certification and traceability requirements are applied.

When risks or issues are identified, the company's primary approach is to work collaboratively with suppliers to implement corrective actions, rather than immediately terminating business relationships. However, in cases where suppliers do not comply with improvement work, business contracts might be discontinued. The decision depends both on the seriousness of the issue and the strategic importance of the supplier. Further, the Senior Sustainability Specialist highlights that Lantmännen's ability to influence suppliers depends on the power balance in the relationship, which affects how sustainability requirements can be enforced. Full transparency and traceability of the entire supply chain is considered unrealistic because of its complexity and the large number of sub-suppliers involved. Instead, the company focuses on risk awareness, certifications, audits and continuous monitoring. The level of traceability that can be achieved varies depending on the product and market structure. For important raw materials, efforts are made to trace impacts further upstream, but for certain products, traceability beyond the first tiers of suppliers is often limited.

For Scope 3 emissions, Lantmännen currently relies mainly on secondary data, while gradually increasing the use of primary data from their key suppliers. Primary data collection has been initiated in certain areas such as agriculture and raw material flows

through closer collaboration with suppliers and supported by digital tools. However, ensuring that the data is comparable and reliable remains a challenge, and there is not yet a fully standardized approach for verification. Instead, internal processes are used to determine whether supplier data can be included in the report. To improve consistency, the company also requests historical data from suppliers and has a bigger focus on changes over time rather than absolute values alone to reduce the risk of misleading comparisons.

Compared to upstream activities, the downstream perspective is perceived as less complex. The main downstream considerations are related to product safety, regulatory compliance and health-related aspects, such as nutritional content and product recalls. However, measuring sustainability impacts after the products leave the company's direct control is difficult in the food industry due to uncertainties about consumer behavior and long-term effects. The relevance of downstream impacts also varies depending on the type of product. For food products, downstream emissions are typically excluded from the report due to these uncertainties, while for other categories, such as machinery and fuel, emissions are estimated based on assumptions about usage, lifecycle and end-of-life treatment. Overall, downstream emissions at Lantmännen are considered relatively small in comparison to upstream emissions. However, CSRD is expected to lead to a more formalized approach also in this area, with downstream emissions being increasingly incorporated into Scope 3 reporting practices.

5.2.4 Industry Collaboration

Lantmännen actively participates in industry collaborations to positively impact suppliers at both national and international levels. In Sweden, this includes engagement in initiatives within their sector where companies collaborate on sustainability-related issues within the food value chain. A key aim of these collaborations is to create common standards and requirements, for example for high-risk raw materials such as soy and palm oil. By working together, companies can avoid competitive disadvantages connected to stricter sustainability requirements and instead raise the baseline across the whole industry. According to the Sustainability Manager, CSRD has contributed to increased focus on these collaborations, although mainly from a compliance perspective rather than as a direct driver of new sustainability initiatives. The collaborations connected to CSRD are more about aligning interpretations and implementation of regulatory requirements than about specific sustainability practices.

5.2.5 Transparency and Reporting as a Competitive Advantage

Transparency and data quality connected to sustainability efforts are described as increasingly important competitive factors. This is shown by how Lantmännen displays climate-related data on their products to inform the consumers of their sustainability efforts. However, it is not the CSRD reporting itself that creates competitive advantage, but rather the underlying sustainability efforts and the ability to connect data to concrete products and value adding activities. The Empowering Consumer Directive, coming into effect in September 2026, is an upcoming regulation focused on requiring verified and reliable data to support claimed environmental efforts. However, sustainability reporting at Lantmännen is described as a “hygiene factor” that needs to be in place rather than a direct competitive advantage. Instead, the competitive advantage comes

from the ability to turn sustainability improvements into concrete offerings and to align expectations with customers.

There are specific challenges regarding the different capabilities of suppliers to provide sustainability-related data. Larger suppliers often have more developed systems and resources to measure and report environmental impacts, while smaller suppliers often lack both the technical capacity and financial resources to meet increasing data requirements. This creates challenges within the supply chain, where some actors are better positioned to respond to the increasing regulatory demands than others. However, the use of estimations and proxy data within the CSRD requirements reduces the immediate pressure on suppliers to deliver primary data. Therefore, data availability is currently not an important factor in supplier selection. This may become more relevant over time, but the current focus is instead on gradually integrating reporting ability together with other evaluation criteria for suppliers.

However, data becomes more critical in other contexts, for example when trying to meet science-based climate targets. Despite this flexibility, there is still an underlying concern that increasing expectations around transparency and traceability, driven by both CSRD and broader market demand, may affect smaller suppliers over time. These actors' risk being excluded if they are unable to keep up with evolving requirements. At the same time, Lantmännen aims to mitigate this risk by working collaboratively with suppliers and supporting improvements, rather than excluding actors because of data limitations. Further, the Senior Sustainability Specialist sees a risk that increased reporting requirements might lead to unwanted consequences, such as "cherry picking" suppliers with already low emissions, rather than supporting sustainability improvement work for high-emission suppliers, which would have a positive long-term impact on overall emissions. Lantmännen therefore emphasizes the importance of incentivizing improvements by supporting suppliers to gain value from emission reductions, rather than just focusing on absolute values.

5.2.6 Future Challenges

The most significant future challenge for Lantmännen is expected to be the first CSRD audit. The difficulties include aligning expectations with auditors regarding scope, level of detail and interpretation of requirements. There are also uncertainties in how the regulation should be applied and differing practices among auditors and companies, which has created challenges so far. Although this is expected to improve over time, the first reporting cycles are anticipated to be particularly demanding. The Sustainability Manager does think that they will benefit from only being required to comply with CSRD from the fiscal year 2027, as many other companies will have had to make the adjustments prior to them, reducing the ambiguities for the auditors. Another key challenge is the tight reporting timeline. Lantmännen has a relatively short reporting cycle, putting considerable pressure on data collection, validation and auditing processes within a limited timeframe. The landscape of standards and frameworks is also perceived as a challenge, as complex and evolving requirements are creating difficulties in deciding which methodologies to apply. There is therefore a need for stabilization of the reporting standards to allow companies to focus more on actual sustainability work and emissions reduction rather than focusing on measurement systems and anticipation of changing requirements. Overall, the primary challenges for Lantmännen going forward are not related to implementing sustainability practices per

se, but rather operationalizing, standardizing and assuring the quality of reporting in line with external requirements.

5.3 Sustainability Reporting at Company X

This following section presents the empirical results from an interview with the Group Sustainability Controller and Sustainability Manager at Company X, a large, privately owned industrial group specializing in plastic film and packaging solutions. Their headquarters is in Sweden, but the group has subsidiaries both within and outside Europe. The group was initially intended to report according to the CSRD starting from the fiscal year 2025 but was affected by the Omnibus initiative and will now be obligated to follow CSRD from the fiscal year 2027 onward.

5.3.1 CSRD in relation to business strategy

The company's current approach to CSRD is mainly as a compliance exercise, as the primary focus at this stage, a couple years prior to the reporting requirement, is to ensure that the company develops the processes necessary to deliver a report that is compliant and audit ready. This includes establishing data collection processes, internal controls and reporting structures aligned with ESRS requirements. The company started preparing for CSRD in 2022, several years in advance. One of the first steps was the hiring and creation of the Group Sustainability Controller role, to make a more structured approach to sustainability reporting possible. Since then, the company has closely followed the regulatory developments and focused on training and education to understand the implications of CSRD and the new requirements it comes with, such as the double materiality assessment. The implementation of CSRD is a phased process for the company. The focus in this initial phase is on establishing a baseline of audit-proof reporting. After this is established, the company can then focus on strategic value, where sustainability reporting can support improvements in sustainability efforts. Today, however, the primary focus is on meeting the regulatory requirements rather than driving a strategic change.

5.3.2 Internal governance and cross-functional integration

The sustainability reporting is coordinated at the group level, where all subsidiaries are responsible for providing the needed input data. The company consists of approximately 18 subsidiaries located in Europe, North America and India which creates complexity in the coordination and governance work. The Group Sustainability Controller is responsible for coordinating, consolidating and reporting sustainability data for the whole group. This includes managing policy reviews, overseeing sustainability reporting processes and ensuring alignment with the regulatory requirements. The responsibility also involves linking reporting outcomes to improvements in policies and strategic objectives.

The company relies on their existing organizational structures to support cross-functional collaboration. Sustainability reporting involves multiple functions across the group, including sourcing, human resources and operations, and is coordinated through established group-level forums and functional teams. However, the introduction of CSRD and the double materiality assessment (DMA) in particular, has increased the

complexity of internal governance. One of the main implications of the DMA is the expansion of material topics: the issues that represent a company's most significant sustainability impacts. This has resulted in increased reporting requirements. While the main material topics have remained the same, additional topics have been identified from an impact perspective across the value chain. This has increased the need for more extensive data collection and monitoring across the group. As a result, the company must examine its existing reporting processes in detail to identify where data already is available, where the reporting needs to be adjusted to align with ESRS requirements and where data is missing. This gap analysis has become a central part of the governance process, requiring the company to determine what data needs to be collected, from who and at what level within the organization. The Group Sustainability Controller highlights that this process has given increased insight into the organization, especially in understanding where data exists and where additional efforts are required, both internally and externally.

A big challenge in this process is to achieve harmonization across subsidiaries. Since different subsidiaries might use different data sources, systems and interpretations of reporting requirements and also differ in size and experience with sustainability reporting, it is difficult to ensure consistency in the reported data. This challenge is also linked to the DMA itself. Although it is intended to increase harmonization, it still requires companies to define their own thresholds and interpretations. This makes the assessment difficult in practice, and it can limit comparability both within the company and between companies. To tackle these challenges, the company is working with internal controls, audits and training to align how the subsidiaries interpret and report data. However, the differences in resources and size are an issue as some subsidiaries are small and do not have the capacity to allocate significant resources or designated staff to sustainability reporting, which impacts their ability to collect and report data consistently. The process therefore requires continuous coordination and communication between different functions and organizational levels. Identifying relevant data sources, clarifying responsibilities and ensuring alignment across subsidiaries is an ongoing process requiring both time and effort.

Another aspect of the internal governance process is how the company has built competence around CSRD requirements. Instead of relying on external support from for example consultants, the competencies are being built up internally. The Group Sustainability Controller has developed the necessary knowledge through training and courses on CSRD and related requirements, such as the double materiality assessment. Position Green, the reporting platform the company uses, provides guiding webinars used to follow regulatory developments, understanding different interpretations of the requirements and to learn from emerging best practices. This continuous learning process is described as an important part of the role, as the regulatory landscape is still evolving and requires ongoing adaptation.

5.3.3 Supply Chain Governance

The supply chain governance is focused on risk identification, supplier engagement and data collection, particularly related to human rights and emissions. A screening approach is used to identify sustainability risks in the supply chain, based on factors such as industry and country of the supplier. This initial screening is then followed by more targeted engagement with suppliers if needed, where further information is

requested to understand how the supplier addresses identified risks and to discuss potential improvements. This approach is based on ongoing collaboration, where the company works together with suppliers to address challenges and improve performance over time. This is particularly important for smaller suppliers that may lack the resources or expertise to meet the emerging reporting requirements. However, visibility across the supply chain is seen as a key limitation. There is an ambition to increase transparency further upstream, but full traceability beyond the direct suppliers is difficult in practice.

Data collection from suppliers, particularly for Scope 3 emissions, is a central governance challenge. Currently, the company relies mainly on secondary or estimated data, as primary data from their suppliers is very limited. One of the main reasons for this is that suppliers use different calculation methods, making their data difficult to integrate. The company therefore often recalculates emissions internally to ensure consistency. Further, the company uses internal validation processes to improve data quality, including reviews of supplier data and comparisons with internal methodologies. However, despite these efforts, ensuring consistent and reliable data remains a challenge.

5.3.4 Digital tools and data management

Digital tools are of high importance when managing sustainability data. The company uses a sustainability reporting platform called Position Green to collect, manage and consolidate data from all their subsidiaries. Position Green has been used since 2020 and was implemented to improve harmonized data collection across the group. Over time, the functionality and offering of the platform has expanded to include support for CSRD-related requirements, such as ESRS reporting and the double materiality assessment. All subsidiaries report their sustainability data using this system. However, while the reporting platform itself is standardized across the group, the underlying data sources differ between the subsidiaries. That means that even though data is collected using a centralized system, the process behind how the data is generated is not fully harmonized. Ensuring consistency and comparability between subsidiaries is therefore a challenge. Position Green is also being used to conduct and manage the double materiality assessment, which has been an important part of the company's preparation for CSRD.

In addition to Position Green, the company is in the process of implementing a new ERP system for the whole group. The main purpose of this system is to standardize and improve overall business operations across all subsidiaries. However, it is also expected to have a positive impact on sustainability reporting. By aligning the system within the group, the company can improve data quality and enable more automated data flows into the reporting platform. The ERP system is being developed by Microsoft, and the transition is expected to take several years, since each subsidiary needs to adapt to the new system. Until then, the data collection will continue to rely partly on manual processes and locally used systems within each subsidiary. The Group Sustainability Controller emphasizes that digital tools and data automation are essential for managing sustainability reporting going forward. Without such systems, the reporting process would be both too time consuming and resource intensive. With the proper systems in place, the organization can start focusing their efforts on ESG impacts, rather than on the reporting exercise alone.

5.3.5 Industry collaboration

The company is actively involved in industry collaborations focused on sustainability by participating in industry associations with the goal of making the transition toward a circular economy. These collaborations are also used to put pressure on suppliers and improve access to sustainability data. For example, the company has participated in initiatives where multiple companies within the same industry are collaborating to collect data from shared suppliers. Such collaboration is important since individual companies might have limited influence over large suppliers. By working together through industry associations, companies can increase pressure on suppliers to provide the necessary data and improve transparency.

5.3.6 Future challenges

Looking forward, the company is facing several challenges connected to the implementation of CSRD. Currently, most of the efforts is focused on building reporting processes and ensuring audit readiness of the report to be able to comply with the future requirements. The long-term challenge however will be to shift focus from the reporting itself to actually using the data to improve sustainability performance. Another challenge is the data availability and consistency, ensuring that all subsidiaries can collect and report data in a consistent way given their differences in size, resources and systems. There is also a need for improved systems and automation as current reporting still involves a significant amount of manual work, and future improvements will depend on the integration of digital tools, particularly the ongoing implementation of a group-wide ERP system. The fact that CSRD is still evolving also creates challenges, as the company continuously needs to follow regulatory developments and adapt its processes accordingly, which creates some uncertainty in long-term planning.

5.4 CSRD Implementation at Scandi Standard

This chapter presents empirical findings from an interview with the Group Sustainability Manager at Scandi Standard, a medium sized, publicly listed multinational food production company and a leading producer of chicken products in seven countries. Scandi Standard was originally planned to be reporting in accordance with CSRD from the fiscal year 2024 but was affected by the Omnibus initiative which delayed the requirements by one year.

5.4.1 CSRD in relation to business strategy

CSRD has affected both operational and strategic initiatives for Scandi Standard. The implementation has primarily been perceived as a compliance-driven exercise at this early stage, but there are emerging impacts to strategic sustainability work as the introduction of additional data points and reporting requirements has created a need for development of new systems and processes to ensure proper follow-up. The Group Sustainability Manager highlights that especially the area concerning social metrics have required increased attention, as their previous sustainability report has focused more on environmental aspects. This has improved the ambition and awareness for these less-developed sustainability areas. Therefore, CSRD has indirectly impacted how the company works with sustainability topics, beyond the reporting work alone.

However, CSRD has come with a large administrative burden, and a significant part of the sustainability functions' work is spent on reporting activities rather than on sustainability improvements, which creates a trade-off between compliance and value-creating activities. Still, it is perceived that business value will be created in the long term, when more maturity is reached, and processes stabilize to allow for better follow-up and comparability over time.

5.4.2 Internal governance and cross-functional integration

The implementation of CSRD has required substantial cross-functional collaboration. The sustainability function, consisting of a sustainability director, sustainability manager and a sustainability controller, is responsible for the sustainability reporting. However, the work is closely connected to finance and communication through a bigger project group responsible for the annual report. Collaboration with the finance function is particularly important, because of the increasing alignment between sustainability and financial reporting. Additionally, Scandi Standard has worked closely with external auditors throughout the implementation process, with frequent meetings, process reviews and discussions about data points and interpretations. This has been increasingly important as the requirements have changed over time following the Omnibus initiative, increasing the need for interpretations and monitoring of legal changes.

The data collection work is decentralized and involves multiple functions within the company. The principle used is that the people closest to the data are responsible for reporting it, such as site-level controllers or technical managers. Data is collected monthly through a digital system and is synchronized with financial reporting timelines such as the quarterly reports. To improve governance and data quality, the company has created internal control frameworks for sustainability reporting to align it more closely with the financial reporting standards. This includes defined processes, controls and verification mechanisms for both internal and external data.

5.4.3 Supply chain governance

Supply chain governance is a central aspect of sustainability work, especially since a large part of Scandi Standard emissions occur in the value chain. The company has established a structured process for supplier risk assessment, including a criterion for identifying high-risk suppliers based on aspects such as geography and product category. High-risk suppliers are required to go through third-party sustainability assessments. If a supplier does not meet the defined thresholds, they are put on a corrective action plan with a two-year timeline for improvement. If the supplier fails to improve the necessary areas, it may lead to termination of the business relationship, although those decisions are made by a dedicated procurement board.

Sustainability requirements are included both in the supplier code of conduct and in the business contracts. The company also tracks key performance indicators related to supplier compliance, such as the share of suppliers signing the code of conduct and high-risk suppliers undergoing assessments. Scandi Standard also works collaboratively with suppliers to improve their sustainability performance, as improvement actions are preferred over exclusions in areas where development can be made. In cases where suppliers lack the resources to meet requirements, for example

smaller suppliers, alternative approaches such as self-assessment questionnaires are used to avoid exclusion. This is especially important in Scandi Standard's industry, as many of their suppliers are relatively small and lack the proper processes, knowledge or resources to report to the same extent as larger suppliers. Self-assessment questionnaires are therefore used to avoid excluding these smaller suppliers, while still getting access to the needed data. In general, data collection from suppliers is largely manual and complex, due to the variety of data formats and documentation, for example invoices, lifecycle analyses etcetera. While the final aggregated data is stored in a central system, calculations are manually performed outside the system, increasing the complexity.

5.4.4 Industry collaboration

Scandi Standard actively works with industry collaboration to address sustainability challenges, especially in parts of the value chain where individual companies have limited influence. One example is their involvement in the Swedish platform for risk crops, focusing on high-risk raw materials such as soy and palm, where companies collaborate with food producers, feed companies and retailers. The purpose is to create a dialogue and more aligned expectations, for example by developing common requirement specifications for suppliers. This is important to create a more unified approach when setting sustainability requirements, and to increase leverage towards suppliers. Scandi Standard also participates in broader collaborations within the food industry. These platforms bring different companies together and are used to discuss shared challenges and exchange practices, contributing to a more coordinated approach to sustainability issues across the industry.

Scandi Standard is also involved in national industry associations in the countries where it operates. An example of this in Sweden is Svensk Fågel, where there are dedicated sustainability groups, discussing for example the collection of climate data from upstream actors, such as farmers. This is an area where collaboration is necessary, both to improve data availability and to develop more consistent ways of working, which is increasingly important for Scope 3 reporting requirements. As Scandi Standard operates within a larger group structure, this also creates internal opportunities for coordination. The different business units share many suppliers, for example within transport, packaging and ingredients. This makes it possible to align sustainability requirements across the group, which reduces fragmentation and allows for a more consistent approach towards suppliers. Overall, Scandi Standard works with both external and internal coordination to manage sustainability challenges in the value chain.

5.4.5 Digital tools and data management

Digital tools play an important role in Scandi Standard's sustainability data management to meet the CSRD requirements. The company has used Position Green as their digital reporting system since 2021, prior to the introduction of CSRD. The implementation of CSRD did not therefore require the introduction of entirely new systems, but instead an expansion and adaptation of the existing one. The main function of the system is to collect, store and verify sustainability data. Data is collected monthly and is also used for quarterly reports, which enables continuous monitoring. With the

introduction of CSRD, the scope of data collection has increased significantly, primarily through the addition of new data points and more standardized reporting requirements. This has required adjustments to how data is structured within the system, moving from internally defined metrics towards more standardized formats. Furthermore, the increased focus on traceability has led to more extensive documentation practices, where supporting evidence such as invoices are uploaded directly into the system. This allows for improved verification and auditability of the reported data.

Despite these improvements, several challenges remain. One key limitation is that not all types of data can be fully managed within a single system. Supplier-related data in particular often requires manual handling because of its complexity and heterogeneity. Data from suppliers may come in different formats which first must be processed and calculated externally before being entered into the system. This creates additional manual work and increases the risk of errors. Another challenge is related to the integration of different types of sustainability data. While quantitative environmental data, such as emissions, is relatively structured and easy to manage, other types of data, such as social metrics, are more difficult to standardize. Variations in internal systems, definitions and data collection methods across countries and functions create challenges in ensuring consistency and comparability.

There is also an increasing need for more advanced digital solutions. In particular, there is an increased focus on improving traceability, reducing manual processes and minimizing the risk of human error. However, finding a single system capable of handling the full complexity of sustainability data, including both qualitative and quantitative aspects, remains a challenge. While existing digital tools are providing a strong foundation for CSRD implementation, further development and integration of data management systems might be necessary to fully meet increasing reporting demands.

5.4.6 Future challenges

Several key challenges are identified for the upcoming years. The biggest one is regulatory uncertainty, as ongoing changes and delays in legal requirements make it difficult to plan and allocate resources efficiently. This uncertainty also creates additional administrative work, as companies may need to adjust already established processes. Another challenge is ensuring traceability, consistency and comparability across different types of data and systems. While climate data is relatively mature and standardized, social data is more complex, with varying definitions and data collection methods across countries and systems. The administrative burden connected to CSRD is expected to continue to be high, which leads to concerns about the balance between compliance efforts and value-creating sustainability initiatives. Looking forward, important steps in the implementation work include developing well-functioning reporting processes and systems, improving data traceability and achieving more clarity in regulatory requirements. Once a stable framework is established, the focus can be shifted to the strategic and business value of sustainability reporting.

6. Analysis

This chapter analyzes the empirical findings from the company interviews presented in Chapter 5, with a focus on how companies are managing sustainability reporting and governance in relation to CSRD. Similarities and differences across the companies are identified, highlighting both shared challenges and company-specific aspects. The findings are structured into three themes: internal governance and cross-functional integration, data management and digitalization, and network-level accountability and supply chain governance. Together, these themes capture how sustainability reporting is organized internally, how data is generated and managed and how responsibilities are distributed across the supply chain.

6.1 Internal governance and cross-functional integration

The empirical findings show that CSRD requires cross-functional integration in sustainability reporting at all companies interviewed. Finance, sustainability, procurement, HR and risk are all involved in different ways, which suggests that sustainability reporting is not something that can be handled by a single function anymore. However, the extent and nature of this integration vary between companies depending on organizational structure, prior experience and governance.

A clear pattern is that the finance function has been given a more prominent role in sustainability reporting, either through official ownership of the report or by increased involvement in data validation and control. This transition is most distinct at Vattenfall, where the finance department has taken over the responsibility of the report and the CFO holds the board-level accountability for it. Similarly, Lantmännen and Scandi Standard have integrated sustainability reporting into the financial reporting structures, while Company X centralizes the coordination through the Group Sustainability Controller. This gives an indication of a transformation toward formalization and alignment of sustainability reporting with financial reporting practices.

Despite these similarities, the impact of CSRD on internal governance structures differs between the companies. Vattenfall represents a company with high maturity in the area, where sustainability reporting and cross-functional collaboration were already well established prior to CSRD. Therefore, CSRD has mainly formalized the existing processes, rather than transforming them. In contrast, Lantmännen and Company X, which are still in the earlier stages of implementation, are making more substantial changes. At Lantmännen, CSRD has contributed to a more structured and formalized sustainability strategy, while Company X are focusing more on building a foundation for the processes, such as data collection systems and internal controls. Scandi Standard is positioned somewhere in between, where CSRD has increased the scope of sustainability work and requires new processes but is still mainly perceived as a compliance-driven exercise, rather than transforming the sustainability strategy.

Organizational structure is also an important factor of the impact on internal governance. Both Lantmännen and Company X have complex group structures with multiple subsidiaries operating in different countries. This creates challenges related to harmonization, as subsidiaries differ in size, resources, systems and experience with sustainability reporting. Therefore, these companies experience challenges in aligning

data definitions, reporting practices and interpretations of requirements within the group. In comparison, Vattenfall and Scandi Standard also face coordination challenges, but these are more related to the scale and complexity of data collection across functions rather than differences between units.

Another key difference is related to the ownership and governance models. Lantmännen, which is a cooperative, has a decentralized structure where each business unit has large responsibility, which increases the need for alignment mechanisms for the group as a whole. Similarly, Company X relies on decentralized data collection within their subsidiaries, requiring strong central coordination. Vattenfall however, with their well-established reporting processes and more unified governance structure as a single company, has a more centralized and formalized governance model.

All the companies interviewed share a similar governance pattern with decentralized data collection combined with centralized coordination. A central function is responsible for consolidating and reviewing the data, aligning processes and ensuring compliance, while the business units or individuals closest to the data have the operational responsibility for the reporting. While this structure is logical in practice, it increases the need for internal control, standardized processes and continuous coordination. The higher level of complexity and heterogeneity within and across intra-organizational units, the more demanding this method becomes.

Industry collaboration works as a complement to the internal governance, as all companies interviewed participate in external initiatives to align standards and increase the influence over suppliers reporting practices, although the purpose of these initiatives varies slightly. For Vattenfall and Scandi Standard, the main goal of the collaboration is to influence upstream suppliers. For Lantmännen and Company X however, the focus is also on aligning interpretations of regulatory requirements, to reduce the uncertainty around how to implement CSRD. This indicates that while all companies agree that industry collaboration is of high importance, the goal and focus of the collaboration differs depending on aspects such as industry characteristics and the company's position in the value chain.

6.2 Data management and digitalization

Data management is a challenging aspect of CSRD implementation at all companies interviewed, but the type of challenges varies depending on the maturity level of the systems, organizational complexity and industry-specific aspects. All companies interviewed use some type of digital system to manage their sustainability data. Company X and Scandi Standard use Position Green, Lantmännen uses IBM Cognos and Vattenfall have established internal systems. These systems make it possible to collect and structure data in a more centralized way. However, all companies emphasize that these digital tools do not solve the underlying data problems. While they help organize the data, they do not ensure that the data is consistent or comparable in the first place.

One reason for this is that data collection is still decentralized, which is a recurring pattern across the companies. Different parts of the organizations use different systems, definitions and methods to generate data. This is especially clear in companies with many subsidiaries, such as Lantmännen and Company X. Even though data is reported

through the same platform, there are challenges in harmonizing data sources, definitions and methodologies. Differences in systems, capabilities and maturity level across subsidiaries causes inconsistencies that creates a need for additional validation and alignment at group level. Although Vattenfall and Scandi Standard also have decentralized data collection, their challenges are instead more related to the volume and complexity of data, rather than differences between organizational units.

Another difference is the level of system integration. Lantmännen has integrated their sustainability reporting into the existing financial reporting system, which allows it to use and benefit from established routines and processes. Company X and Scandi Standard, however, use a dedicated sustainability platform, which centralizes the reporting but does not harmonize the actual data generation processes. Company X is currently implementing a group-wide ERP system to handle this issue, which is an indication of a transition towards further integration into other processes in the organization. This shows different approaches to digitalization, where some companies prioritize integration with existing systems while others focus on specialized tools.

A common challenge across all cases is the dependency on manual processes, especially for supplier data. Scandi Standard and Company X both highlight that supplier data often comes in different formats and needs to be processed and calculated manually before it can be reported. This increases the administrative burden and the risk of errors. Even in companies with more developed systems, such as Vattenfall and Lantmännen, data collection is still described as complex and time-consuming. Data quality and availability is especially challenging for Scope 3 emissions. All companies express limited access to primary data from suppliers, and they therefore rely largely on estimates or secondary data. Even when suppliers do provide data, differences in calculation methods can make it difficult to use the data directly. Company X, for example, often needs to recalculate their supplier data internally to ensure consistency with their own data. Lantmännen also expresses challenges in verifying and comparing supplier data, especially since there is no standardized approach.

The challenges related to Scope 3 data also differs depending on the industry. Lantmännen, who are operating in food and agriculture, have challenges connected to biological processes and variability in production, while Scandi Standard faces difficulties in measuring social and downstream impacts. Company X experiences inconsistencies in industrial data and calculation methods from their suppliers, while Vattenfall has challenges related to their complex upstream supply chain and large volumes of data. These differences indicate that while there is an overall issue regarding data quality, the type of data challenge varies between industries. Differences in supplier capabilities further contribute to these challenges. Larger suppliers are generally better equipped to provide data, while smaller suppliers often lack the resources or systems needed. This is especially emphasized by Lantmännen and Scandi Standard, where many suppliers are small, family owned, farms with limited reporting capabilities compared to large suppliers. Therefore, companies need to balance the increasing data requirements with the risk of excluding smaller actors in the supply chain.

In summary, the empirical findings show that all companies are in a transitional phase regarding data management, but at different stages of maturity. Vattenfall is at an advanced stage, with established systems and processes, while Company X is still building the foundation for their future capabilities. Lantmännen and Scandi Standard

are at a stage in between, with implemented systems but with challenges in standardization and data quality. This variation highlights how company size, structure and prior experience impact the ability to manage sustainability data effectively.

6.3 Network-level accountability and supply chain governance

One of the biggest implications of CSRD is that sustainability reporting is no longer limited to the company itself but depends on the whole value chain. This is especially clear in Scope 3 reporting, where companies rely on data from suppliers and other external actors. However, all companies interviewed state that full control or visibility over the supply chain is not realistic, especially in complex global supply chains. For Vattenfall, the main challenges are upstream, high-risk raw materials such as minerals and metals. Lantmännen has similar upstream challenges connected to their agricultural supply chain, and both companies find that tracing impacts across multiple tiers is extremely difficult. Company X and Scandi Standard also experience limited visibility beyond their direct suppliers and challenges with managing different supplier data formats. This shows that even though companies are expected to report on their entire value chains, they are doing it with incomplete information.

To handle these challenges, all companies use some sort of risk-based approach. Suppliers are segmented based on factors like geography, product category and industry risk, and more effort is focused on high-risk areas. While this general approach is similar across all companies, the implementation of it differs. Vattenfall maps their supply chain actors in high-risk categories several tiers upstream, sometimes as far up as the mining level and performs in-person controls when needed. Lantmännen combines top-down risk indicators with bottom-up procurement processes. Scandi Standard uses structured supplier assessments and performance tracking, while Company X relies more on initial screening followed by targeted engagements. These differences reflect both industry specific variations and internal capabilities, where larger and more mature organizations such as Vattenfall have the possibility and resources to perform deeper supply chain controls.

Another similarity between the cases is the supplier engagement and active improvement work together with suppliers who do not meet the sustainability requirements, rather than excluding them. All companies interviewed prefer collaboration and corrective action plans, where suppliers are given the opportunity to improve. Termination of the business relationship is still an option for suppliers who do not show the willingness to improve, but it is usually seen as a last resort. This indicates that companies are trying to balance sustainability requirements with maintaining stable supply relationships.

The extent to which companies can enforce their requirements depend on the power dynamics of the relationship. Lantmännen explicitly mentions that their ability to influence suppliers depends on the power balance in the relationship. For certain products or materials, there might only be one or a few suppliers available on the market and in those cases, the focal company's ability to make demands are limited, compared to cases where the suppliers are highly dependent on the focal company. Similarly, Vattenfall notes that in cases where there are few alternative suppliers, they sometimes need to continue working with existing ones while also exploring other options. This

shows that apart from regulatory requirements, sustainability governance is also about what is realistically possible given the market conditions and industry structure.

There are also industry-related differences regarding where the main challenges are located. For Vattenfall and Lantmännen, most of the sustainability risks and emissions are upstream, which is where the majority of the governance efforts are focused. For these companies, downstream impacts are either very difficult to measure or less significant, and therefore less effort is placed there. While Scandi Standard also mainly focuses on upstream impact, downstream aspects like product use and consumer behavior are considered and included in the sustainability efforts, even though these are more difficult to measure. These differences further highlight how product and industry characteristics shape the scope and focus of supply chain governance.

Data collection from suppliers, especially for Scope 3 emissions, is a shared challenge across all companies. However, the degree to which the companies rely on estimated and secondary data compared to primary data differs between the cases. Lantmännen and Company X rely heavily on estimated data, while gradually trying to increase the use of primary data through supplier collaboration. Vattenfall and Scandi Standard also experience limitations in the supplier data received, but complement the data collection with audits, certifications and active monitoring. These different governance mechanisms are used to manage supply chain risks, rather than relying on data alone.

Industry collaboration is described as increasingly important for all companies, especially in cases where individual companies have limited influence over suppliers. Through collaboration, companies can align requirements, share practices and increase pressure on suppliers. However, the aim of the collaboration differs slightly between the companies interviewed. For Vattenfall and Company X, it is mainly used to increase influence over global suppliers, while for Lantmännen and Scandi Standard, it also aims to align standards within the industry and reduce competitive disadvantages for companies committing to sustainability efforts, such as increased cost and additional compliance efforts. In these cases, collaboration can be used to align expectations and interpretations, rather than about developing entirely new sustainability practices. In that sense, it helps manage the complexity of the supply chain challenges. Altogether, the findings show that while companies use similar supply chain governance approaches, such as risk-based supplier segmentation and collaborative industry engagement, the actual implementation is shaped by aspects such as industry characteristics, supply chain complexity and organizational context.

7. Discussion

This chapter discusses the findings of the research connected to the theoretical framework and previous research on the topic to gain a deeper understanding of the empirical results and their implications for sustainability reporting within supply chain networks.

7.1 General vs. context-specific challenges in CSRD implementation

The findings indicate that the challenges with CSRD implementation can be divided into two main categories: general challenges that are shared between all companies and context-specific challenges that vary depending on internal and external factors such as industry, supply chain structure, organizational maturity and company governance models. This suggests that while CSRD provides a shared regulatory framework, the implications differ between companies in practice.

7.1.1 General Challenges Across Companies

Several of the challenges identified in the analysis, for example the difficulties with cross-functional integration, data collection and coordination with other organizations, can be considered general as they are recurring in the results. These challenges are in line with the findings of Lambert and Cooper (2000), who argue that effective supply chain management requires integration between functional silos and coordinated management of interorganizational processes. The empirical findings imply that many companies struggle to establish this integration in practice, especially since sustainability reporting comes with new data requirements that involve multiple functions such as procurement, finance and operations. This indicates that CSRD exposes existing weaknesses in internal organizational structures. Apart from the sustainability work itself, the challenges are therefore also connected to organizational integration and governance.

Another general challenge is the quality, availability and usability of sustainability data. The analysis shows that many companies have difficulties collecting reliable sustainability data, especially for Scope 3 emissions. Even when data is available, it is often inconsistent, incomplete or difficult to compare between suppliers and organization units. This aligns with Ho (2025), who emphasizes that sustainability reporting requires “decision-grade data routines” where data must be reliable, comparable and usable in operational decision-making processes. The empirical findings indicate that many companies are still in an early process of developing these routines, which results in fragmented reporting processes and large amounts of manual work.

Further, the findings imply that uncertainty about reporting requirements and interpretations of sustainability metrics is a general issue. Companies struggle to determine what data should be collected and how it should be measured. Sustainability itself is also interpreted differently between organizations and supply chain actors, which complicates the implementation of standardized reporting practices. This is also

reflected by Meckenstock et al. (2015), who describe sustainability as a “wicked problem” with different stakeholder perspectives and without a clear, universally accepted definition. Many of the implementation challenges might therefore be caused by the complexity of sustainability itself, and not by the actual regulatory framework.

7.1.2 Context-Specific Challenges

Although many challenges are shared between all companies, the findings also indicate that the characteristics and level of these challenges vary depending on both internal and external contextual factors. One important aspect is the industry characteristics and supply chain structure. Companies with global, complex and multi-tier supply chains are facing more difficulties with collecting and verifying sustainability data, especially beyond tier-1 suppliers. This is especially apparent in industries with a wide geographical spread of the supply chain network and with many layers of upstream suppliers. This further supports Garcia-Torres et al. (2019) and Rajeew et al. (2017), who argue that sustainable supply chain management becomes more difficult when supply chains are fragmented and globally distributed. The empirical findings suggest that companies with longer and more complex supply chains experience lower visibility beyond tier-1 suppliers and more uncertainty about the reliability of sustainability data provided by suppliers. Companies with more centralized or regional supply chains, however, appear to have more control and transparency in their reporting processes.

Another contextual factor is the organizational maturity and internal governance structures. The findings indicate that companies with more established sustainability practices and stronger internal coordination mechanisms are in a better position to integrate CSRD requirements into their existing processes. However, organizations where sustainability work has previously been less formalized are facing bigger implementation challenges, especially around responsibility allocation, process ownership and coordination between functions. This can be connected to Lambert and Cooper (2000), who mean that effective supply chain management depends on integrated cross-functional processes and aligned managerial components such as organizational structures, planning systems and information flows. Companies with more mature governance structures might therefore have better conditions for integrating sustainability reporting into their existing operations. The findings are also in line with Ho (2025), who emphasizes that sustainability reporting requires “decision-grade data routines” in operational systems and cannot be managed as isolated reporting activities. Furthermore, Meckenstock et al. (2015) argue that sustainability implementation requires continuous organizational adaptation and alignment between actors and processes. This indicates that the success of a CSRD implementation is impacted by the internal organizational model and the maturity of sustainability governance within the company.

Company size and resource availability also seem to influence the implementation capabilities. Larger organizations often have access to more specialized sustainability expertise, more advanced digital systems and larger financial resources for reporting activities. Smaller companies, however, seem to be facing bigger challenges with knowledge, resources and the administrative burden. This supports the findings of Ahern (2023) and Lilja (2026), who argue that many SMEs lack the expertise, monitoring system and resources required to meet the increased sustainability reporting demands.

Further, differences in supplier relationships and power positions within the supply chain also impact how companies experience CSRD implementation. Companies with more power toward suppliers can generally easily enforce reporting requirements and standardize the data collection processes. However, organizations with less influence over upstream suppliers have more difficulties in accessing reliable sustainability information. This is in line with the structural challenges identified by Garcia-Torres et al. (2019), where focal companies are accountable for sustainability outcomes despite limited visibility and control further upstream in the supply chain.

Altogether, the findings imply that while some implementation challenges are shared among organizations, the practical impact of CSRD is impacted by contextual factors such as industry, organizational maturity, governance models, supply chain complexity and resource availability. This indicates that CSRD implementation is a context-dependent transformation, rather than a standardized process.

7.2 Compliance vs. value creation

A key difficulty identified is the balance between compliance-driven reporting and value-creating sustainability work. In the early stages of CSRD implementation, companies primarily view sustainability reporting as a compliance requirement that needs to be completed in time. Substantial resources are allocated to collecting, validating and structuring sustainability data, which often increases pressure on the existing organizational processes. The findings of Niemann et al. (2025) supports this, describing sustainability reporting under CSRD as connected with high administrative complexity and uncertainty regarding reporting requirements and data demands.

However, the findings also indicate that the relationship between compliance and value creation is not necessarily a strict trade-off. Instead, the reporting processes could gradually create stronger organizational structures, improved transparency and more integrated sustainability management over time. This development can be connected to Lambert and Cooper's (2000) perspective on supply chain management, where integrated information flows and coordinated business processes are crucial for effective supply chain governance. From this perspective, CSRD reporting requirements force companies to create more formalized structures to manage sustainability related information between functions and organizational units. In practice, this means that reporting requirements could contribute to the integration of sustainability into operational processes that previously might have been fragmented or poorly coordinated.

The findings further support Ho's (2025) argument that sustainability work is dependent on the development of "decision-grade data routines." Companies describe the initial reporting phase as resource-intensive and largely compliance-focused, but that the processes gradually create more structured and standardized sustainability data. This helps sustainability data to become more useful over time, supporting activities such as supplier evaluation, sourcing decisions and internal planning processes. In this sense, the findings imply a transformation from sustainability reporting viewed as a separate compliance exercise to a more integrated management tool used for operational decision-making.

This development is also reflected in literature about sustainable supply chain management, such as Rajeev et al. (2017) and Garcia-Torres et al. (2019) who argue that sustainability management requires coordinated management of material, information and financial flows across the supply chain. CSRD could contribute to improving these information flows by increasing the need for standardized sustainability data transfer between suppliers. Although this initially creates an increased administrative burden, it also increases visibility within the supply chain and creates opportunities for more systematic sustainability governance.

The findings also imply several challenges concerning this transformation. Meckenstock et al. (2015) describe sustainability as a “wicked problem,” where competing priorities and different interpretations of the definition hinders implementation efforts. This perspective helps explain why some companies perceive reporting requirements as limiting or distracting from “actual” sustainability improvements. Organizations seem to struggle with balancing short-term compliance needs with long-term sustainability goals, especially when resources are limited, and reporting requirements continuously are changing.

However, the empirical findings largely support Lilja’s (2026) argument that sustainability reporting is gradually turning into a strategic and competitive topic rather than just regulatory. Several companies use sustainability data for supplier evaluation processes and strategic planning. This indicates a shift toward viewing sustainability transparency as a tool for improving competitiveness and supply chain coordination, rather than just a compliance exercise. CSRD implementation can therefore be described as a gradual organizational transformation process. While the early stages include large administrative burdens and compliance-focused work, the reporting structures developed through the implementation process could over time improve governance mechanisms, information flows and lead to more integrated sustainability management within the supply chain networks.

7.3 Structural implications for supply chain governance

The findings indicate that CSRD has significant implications for how supply chains are managed and coordinated. Sustainability reporting increasingly requires companies to function as interdependent networks rather than as individual organizations. This reflects Lambert and Cooper’s (2000) view of supply chains as interconnected networks of companies linked together through shared business processes and information flows. Although their research concerns general supply chain management, without a connection to sustainability, their results can be connected to the implications for sustainability governance in supply chains. Companies are becoming increasingly dependent on suppliers for sustainability data, especially for Scope 3 emissions and sustainability reporting therefore expands outside of organizations and is included in broader supply chain relationships, linked together as Lambert and Cooper (2000) suggest. This development also aligns with the findings of Garcia-Torres et al. (2019), who argues that sustainability responsibility in global supply chains goes beyond the focal company and requires coordination between multiple actors and tiers. This means that companies are expected to take responsibility for sustainability impacts both up- and downstream in their supply chain, even though there is often no direct visibility or control over these activities. This creates a tension where companies are held accountable for outcomes that are outside their direct impact.

However, while CSRD increases the need for network coordination, the findings imply that supply chain governance in practice still is selective, and not fully integrated. This can be connected to Lambert and Cooper (2000), who emphasize that companies do not manage all interorganizational relationships equally and prioritize relationships and processes that are considered to be the most strategically important. In the empirical findings, the companies focus their sustainability efforts mainly on suppliers that are classified as high-risk, strategically important or have a particularly high sustainability impact. This selective management approach shows the limitations of managing sustainability in complex and fragmented supply chain networks in practice, where prioritization must be made.

These findings also support Ho's (2025) concept of "designed collaboration density", meaning that collaboration should be strategically structured and prioritized rather than maximized across the entire network. Companies cannot enforce strict data requirements or have close collaboration with all suppliers simultaneously because of their limited resources and coordination capacity. Instead, organizations prioritize their efforts on suppliers where sustainability risks or business dependencies are the highest. This implies that governance under CSRD requires prioritization of resource allocation rather than increased integration with all tiers of the supply chain.

Further, the findings align with Jokinen et al. (2025), who describe sustainability reporting networks as centralized around the focal company, with relatively low overall network density. Sustainability collaboration primarily occurs between focal companies and individual suppliers, rather than through wider network-level coordination. This indicates that supply chain governance under CSRD still follows traditional focal firm-centered structures to a large extent, even with the increasing interdependence created by sustainability reporting requirements.

There is also an increasing need for information flows and data governance within supply chain relationships. Lambert and Cooper (2000) argue that structured and reliable information exchange is required for effective supply chain integration. Furthermore, Ho (2025) suggests that sustainability governance increasingly depends on robust "decision-grade data routines" that are supported by digital tools and standardized reporting systems. The empirical findings align with this perspective, as companies are investing in digital sustainability platforms, supplier data collection systems and traceability tools to improve visibility and standardization across supply chains. However, the findings also suggest that the effectiveness of digital systems depends largely on supplier capabilities, governance structures and the ability to integrate sustainability data into existing organizational processes.

Another important aspect is the changing nature of supplier relationships. The empirical findings indicate a shift from mainly transactional supplier interactions to more collaborative and long-term relationships, with a focus on sustainability data sharing and continuous improvement. This corresponds with Lilja's (2026) conclusion that sustainability reporting is increasingly impacting supplier selection and relationship management. Sustainability performance and data availability is becoming an integrated part in sourcing decisions, together with traditional aspects such as cost and quality, creating new interorganizational dependencies within the supply chain.

Meanwhile, the findings suggest that companies still face significant limitations in visibility and impact over the supply chain. This is reflected by the complexity

described by Garcia-Torres et al. (2019), where fragmented global supply chains, geographical distance and limited traceability make sustainability coordination difficult. Companies therefore use industry collaborations, shared reporting initiatives and standardized sustainability platforms as a complement to supply chain governance, to reduce fragmentation and improve coordination within the network. In summary, CSRD contributes to a transformation of supply chain governance structures. While sustainability reporting creates stronger interdependencies between supply chain actors and increases the need for information sharing and coordination, the shift is being held back by selective governance practices, power dynamics, complex supply chains and limited visibility beyond direct supplier relationships.

8. Conclusions

This thesis has addressed how companies manage sustainability reporting and governance in relation to CSRD, with a focus on internal governance structures, data management and supply chain governance. The findings suggest that CSRD implementation, apart from being a reporting challenge, also is an intraorganizational and interorganizational transformation process that impacts how companies manage sustainability work both internally and within supply chain networks. Further, the results imply that while several implementation challenges are general and shared across companies, the practical implications of CSRD are highly influenced by contextual factors such as industry characteristics, supply chain complexity, organizational maturity and governance structures.

8.1 Implications for Research

The findings contribute to the existing literature on sustainable supply chain management and sustainability reporting by demonstrating how CSRD implementation extends beyond regulatory compliance and impacts broader governance structures within organizations and supply chains. The study supports previous research by highlighting the importance of cross-functional integration, coordinated information flows and interorganizational collaboration in sustainability management. Further, the results imply that sustainability reporting increasingly depends on complex relationships between focal companies and external actors within the supply chain network.

The study further contributes to the understanding of sustainability reporting as a context-dependent process. While previous literature often discusses sustainability reporting requirements on a general level, the findings suggest that implementation challenges and governance actions differ significantly depending on organizational maturity, industry characteristics and supply chain structures. This implies that sustainability reporting cannot be seen as a standardized process and needs to be analyzed based on the organizational and network context.

In addition, the study contributes to the discussion of the relationship between regulatory compliance and value creation in sustainability management. Sustainability reporting under CSRD is currently largely compliance-focused, especially during the early stages of implementation. The process of collecting, validating and structuring sustainability data requires significant resources and often results in increased administrative burden and uncertainty. However, the findings also indicate that the relationship between compliance and value creation should not necessarily be viewed as a trade-off. Over time, the reporting processes can contribute to more structured governance mechanisms, improved transparency and stronger integration of sustainability into operational and strategic decision-making processes. Sustainability reporting therefore appears to gradually shift from primarily a compliance exercise into a more integrated management tool within supply chain governance.

8.2 Implications for Practice

Several practical implications for companies managing CSRD implementation have been identified. One important aspect is the need for stronger cross-functional integration within organizations. Sustainability reporting increasingly requires coordination between functions such as finance, procurement, operations and sustainability, making it difficult to manage sustainability reporting as an isolated activity. Companies therefore need governance structures that support collaboration, responsibility allocation and integration of sustainability data into existing operational processes.

Further, data management capabilities are another important implication. Digital reporting systems alone cannot solve sustainability reporting challenges if the underlying data generation processes are fragmented or incomplete. Companies therefore need to focus on standardizing processes, clarifying data definitions and developing reliable routines for sustainability data collection and validation both between the organizational units and with suppliers.

The results also highlight the importance of supplier relationships and collaborative governance mechanisms. Companies become more dependent on suppliers for sustainability data and collaboration, especially for Scope-3 emissions, and sustainability performance increasingly influences supplier selection and relationship management. However, companies often need to prioritize efforts towards high-risk or strategically important suppliers due to limited resources and visibility. This indicates that risk-based prioritization and industry collaboration are important governance mechanisms for managing sustainability reporting in complex supply chains.

Additionally, the findings indicate that companies with more mature sustainability governance structures and integrated reporting processes are in a better position to manage the implementation of CSRD requirements. Organizations that already have established coordination mechanisms, internal controls and reporting routines seem to face fewer implementation challenges compared to companies where sustainability practices are less formalized.

8.3 Future Research

This study also identifies multiple areas where further research is needed. First, additional research could explore how CSRD implementation develops over time. Since many companies are currently in an early implementation stage, future longitudinal studies could provide deeper insights into how sustainability governance structures, reporting routines and supply chain relationships transform over time as companies gain more experience with CSRD. Longitudinal studies could further examine whether the increased efforts on sustainability reporting leads to valuable impact on sustainability performance, increased integration of sustainability into decision-making processes and a more shared definition of sustainability between organizations

Second, future studies are needed to explore the long-term impact that CSRD might have on the structure of supply chain networks. The findings of this study suggest that

companies with large and complex supplier networks often need to prioritize their sustainability governance efforts due to their limited visibility and resource capacity. This raises questions about whether increased sustainability reporting requirements could contribute to more centralized or simplified supply chain structures in the future, for example through a reduced number of suppliers or stronger long-term supplier relationships to improve traceability and coordination.

Additionally, future research could explore the role of contextual dependencies in CSRD implementation and sustainability governance. This study indicates that factors such as industry characteristics, organizational maturity, governance structures and supply chain complexity largely impact how companies experience and manage sustainability reporting. Future studies could therefore further investigate how different contextual factors shape the implementation challenges and which governance methods and organizational structures are the most effective for different situations.

Further, future research could examine the implementation challenges of small and medium-sized enterprises (SMEs). This study mainly focuses on larger organizations with relatively advanced sustainability capabilities, while previous literature suggests that SMEs often face more limitations in terms of resources, expertise and reporting systems. More research is therefore needed to understand how smaller organizations manage increasing sustainability reporting requirements.

Finally, future research could also investigate how artificial intelligence (AI) and other emerging digital technologies might impact sustainability reporting and supply chain governance in the future. Technologies such as AI-driven data analysis, automated reporting systems and digital traceability tools could potentially reduce administrative burdens, improve data quality and increase visibility in supply chains. However, these new technologies could also create new governance challenges connected to data reliability and technological dependency. Further research is therefore needed to understand both the opportunities and limitations of digital technologies in sustainability reporting and CSRD implementation.

9. Sources

Ahern, D. (2023). *The sustainability reporting ripple: Direct and indirect implications of the EU Corporate Sustainability Reporting Directive for SME actors*. In A. Bartolacelli (Ed.), *The Prism of Sustainability*.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4517356

ASUENE Inc. (2025, March 31). Europe's omnibus package: Background and key changes. ASUENE Blog. <https://asuene.com/us/blog/europes-omnibus-package-background-and-key-changes>

Bell, E., Bryman, A., & Harley, B. (2022). *Business research methods* (6th ed.). Oxford University Press.

EFRAG. (2024). IG 1: Materiality assessment.

https://www.efrag.org/sites/default/files/sites/webpublishing/SiteAssets/IG%201%20Materiality%20Assessment_final.pdf

European Commission. Directorate-General for Financial Stability, Financial Services and Capital Markets Union. (2025, April 1). Omnibus package.

https://finance.ec.europa.eu/news/omnibus-package-2025-04-01_en

European Commission. (n.d.). Corporate sustainability due diligence.

https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en

European Union. (2014). *Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups* (Official Journal of the European Union, L 330, 15.11.2014). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0095>

European Union. (2022). *Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting* (Official Journal of the European Union, L 322, 16.12.2022). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464>

Garcia-Torres, S., Albareda, L., Rey-Garcia, M., & Seuring, S. (2019). Traceability for sustainability: A literature review and conceptual framework. *Supply Chain Management: An International Journal*. <https://www.emerald.com/scm/article-abstract/17/5/517/356707/Themes-and-challenges-in-making-supply-chains?redirectedFrom=PDF>

Ho, Y. H. (2025). *Decarbonisation in supply chains* (Master's thesis, Cranfield University). Cranfield University repository.

<https://dspace.lib.cranfield.ac.uk/server/api/core/bitstreams/b6fe4268-5665-4917-925d-ce2dee71c7bb/content>

IBM. (n.d.). Global Reporting Initiative (GRI). Retrieved April 12, 2026, from <https://www.ibm.com/think/topics/global-reporting-initiative>

Jokinen, L., Harju, N., Kinnunen, K., & Hänninen, S. (2025). *Implications of Corporate Sustainability Reporting Directive (CSRD) to Company Network Collaboration*. *Journal of sustainability research*, 7(1), Article e250018. <https://doi.org/10.20900/jsr20250018>

IntegrityNext. (n.d.). *CSRD timeline*. IntegrityNext. <https://www.integritynext.com/csrd-timeline>

KPMG. (n.d.). *CSRD: The new EU Directive on sustainability reporting*. KPMG. <https://kpmg.com/se/en/services/esg-sustainability/csrd.html>

Lambert, D. M., & Cooper, M. C. (2000). *Issues in supply chain management*. *Industrial Marketing Management*, 29(1), 65–83. [https://doi.org/10.1016/S0019-8501\(99\)00113-3](https://doi.org/10.1016/S0019-8501(99)00113-3)

Lilja, M. (2026). *Implications Of Corporate Sustainability Reporting Directive On Supplier Collaboration Development And Information Management: A Case Study* (Master's thesis, Lappeenranta–Lahti University of Technology LUT). LUT University repository. https://lutpub.lut.fi/bitstream/handle/10024/171276/Mastersthesis_Lilja_Miisa.pdf?sequence=1

Martins, C. L., & Pato, M. V. (2019). Supply chain sustainability: A tertiary literature review. *Journal of Cleaner Production*, 225, 995–1016. <https://doi.org/10.1016/j.jclepro.2019.03.250>

Meckenstock, J., Barbosa-Póvoa, A. P., & Carvalho, A. (2015). The wicked character of sustainable supply chain management: Evidence from sustainability reports. *Business Strategy and the Environment*, 25(7), 449–477. <https://onlinelibrary.wiley.com/doi/10.1002/bse.1872>

Niemann, L., Morssinkhof, S., van der Linden, M. J., & de Vries, K. (2025). *Data requests in value chains: The effects of corporate sustainability reporting on SMEs in The Netherlands*. <https://www.mdpi.com/3487082>

Rajeev, A., Pati, R. K., Padhi, S. S., & Govindan, K. (2017). Evolution of sustainability in supply chain management: A literature review. *Journal of Cleaner Production*, 162, 299–314. <https://www.sciencedirect.com/science/article/abs/pii/S0959652617309514>

Appendix

The appendix presents a general sample of the interview guide. The exact questions given to each respondent varied depending on the role and organization of the interviewee.

CSRD Impact & Current Status

- How are you affected by CSRD?
 - How have you started to prepare for the implementation?
- What will be the biggest changes compared to before?
- Which aspects of CSRD have been the most challenging to interpret or implement so far?

Governance & Strategy

- From your perspective, is CSRD mainly affecting reporting or is it also influencing how the business is managed and decisions are made?
- How are CSRD requirements translated into internal processes, policies or governance structures?
- Have you seen any changes in internal priorities or resource allocation as a result of CSRD?

Internal Organization & Reporting Processes

- How do you coordinate sustainability reporting across the organization?
- Which functions are most critical in delivering the data required for CSRD reporting?
- What are the main challenges in working cross-functionally with sustainability data?
- How do you ensure consistency and reliability of data across different business units?
- Have you needed to introduce new systems, tools or competencies to meet CSRD requirements?

Digital Systems & Data Infrastructure

- What digital systems or tools do you currently use to collect, manage and consolidate sustainability data?
- Have you had to implement new systems or upgrade existing ones due to increasing reporting requirements such as CSRD?
- What are the main limitations of your current data systems?
- Do you see an increasing need for more advanced digital solutions (e.g. automated data collection, integrated platforms)?
- Do you think that sustainability reporting will become more system-driven and standardized in the coming years?

Supply Chain Practices

- How do you work to identify sustainability risks in your value chain?
- How do you identify high-risk suppliers?
- How far back in the supply chain do you consider it realistic to have control?
- Do you have examples of when you have chosen to retain problematic suppliers and instead influence their sustainability practices, rather than terminating the business relationship?
 - Examples of when you have instead switched suppliers?
 - How do you make that trade-off?

Data Collection & Data Quality

- How do you collect data from suppliers for Scope 3 reporting in practice?
 - not use with their calculations, different way to calculate footprint
- To what extent do you use:
 - Primary data from suppliers vs.
 - Estimates/secondary data?
- What are the main challenges related to data quality?
- How do you ensure that supplier data is accurate and comparable?
- Have you needed to invest in new systems or digital solutions to manage Scope 3 data?

Downstream Perspective & Product Use

- How do you manage the challenge of measuring and reporting downstream impacts that are outside your direct control?
- Do you see this area gaining more focus going forward due to CSRD?

Industry Collaboration

- Is there collaboration within the industry to influence further down the value chain?
 - Examples of this? Specific companies?
- Do you see that new regulations have increased incentives for collaboration between partners/competitors?

Supplier Selection & Incentives

- Does reporting capability influence supplier selection?
 - Do you choose suppliers partly based on how well they can report sustainability data?
- Has transparency and data quality become a competitive advantage for suppliers?
- Is there a risk that smaller suppliers will be excluded because they lack the resources to meet reporting requirements?
- How do you balance setting requirements with supporting suppliers in the transition?
- Do you perceive sustainability work/reporting as a competitive advantage? For you and your suppliers?

- Do you see Scope 3 influencing how you design your value chain (e.g., location, sourcing)?

Future Outlook

- How do you think the work with Scope 3 will develop over the next 3-5 years?
- What is required to move from reporting to actual emission reductions in the value chain?
- Do you think CSRD will lead to real changes in how value chains are governed, or mainly to better measurement?

