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**Costs and Benefits of Sustainability Data Collection along the
Supply Chain in the context of Regulatory Requirements for
Sustainable Food Companies**

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Abstract (ENG)

Sustainability reporting has shifted from a voluntary activity to a mandatory requirement in the European Union under the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards (ESRS). This thesis investigates the costs and benefits of sustainability data collection in the sustainable food industry. Using a qualitative research design, semi-structured interviews were conducted with three German food companies directly engaged in sustainability functions. The findings reveal persistent challenges in accessing reliable supplier data and inconsistencies in metrics. The main costs identified relate to internal resources. At the same time, companies reported clear benefits, including improved risk management, enhanced efficiency, reputational gains and greater access to financing. Although the CSRD and ESRS make reporting more complex, they also give companies a clearer set of rules to follow. The study offers insights into sustainability reporting in the sustainable food sector that are relevant for both policymakers and companies.

Titolo (ITA)

Costi e Benefici della Raccolta di Dati di Sostenibilità lungo la Supply Chain nel contesto dei Requisiti Regolatori per le Imprese Alimentari Sostenibili

Abstract (ITA)

La rendicontazione di sostenibilità è passata da un'attività volontaria a un obbligo normativo nell'Unione europea con l'introduzione della Corporate Sustainability Reporting Directive (CSRD) e degli European Sustainability Reporting Standards (ESRS). Questa tesi analizza le sfide, i costi, i benefici e le opportunità associati alla raccolta dei dati di sostenibilità nel settore alimentare sostenibile. Adottando un metodo di ricerca qualitativo, sono state condotte interviste semi-strutturate con tre aziende alimentari tedesche direttamente coinvolte in funzioni di sostenibilità. I risultati indicano che i principali costi sono legati alle risorse interne, mentre permangono sfide significative nell'accesso a dati affidabili dei fornitori e nella gestione delle incoerenze nelle metriche di sostenibilità. Allo stesso tempo, le imprese hanno riportato benefici evidenti, tra cui un miglioramento della gestione del rischio, una maggiore efficienza, vantaggi reputazionali e un accesso facilitato ai finanziamenti. Sebbene la CSRD e gli ESRS rendano la rendicontazione più complessa, essi forniscono anche alle imprese un quadro normativo più chiaro da seguire. Lo studio offre spunti rilevanti sulla rendicontazione di sostenibilità nel settore alimentare sostenibile, utili sia per i policymakers che per le imprese.

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List of Abbreviations

BNN	Bundesverband Naturkost Naturwaren
CSRD	Corporate Sustainability Reporting Directive
DNK	Deutscher Nachhaltigkeitskodex
EFRAG	European Financial Reporting Advisory Group
EMAS	Eco-Management and Audit Scheme
ESG	Environmental, Social and Governance
ESRS	European Sustainability Reporting Standards
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GRI	Global Reporting Initiative
IFRS	International Financial Reporting Standards
KPI	Key Performance Indicator
NFRD	Non-Financial Reporting Directive
NGO	Non Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
SABS	Sustainability Accounting Standards Board
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprise

1 Introduction

In recent years, sustainability has become a central concern for companies across different industries and regions. The growing urgency of climate change and increased expectations from regulators, investors and civil society have turned sustainability reporting from a voluntary practice to a mandatory component of corporate governance. In the European Union (EU), this transformation is driven by the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards (ESRS), which set out detailed disclosure requirements across environmental, social and governance (ESG) dimensions. In this setting, the collection and disclosure of sustainability data have emerged as both a necessity and a challenge, particularly in industries characterised by complex supply chains and significant environmental impacts, such as the food sector.

The agri-food industry, especially, is an important actor for the sustainability transition. Food systems are in fact responsible for nearly one-third of global greenhouse gas emissions and are the single largest contributor to biodiversity loss (FAO, 2024; Bakhtary, Palmegiani, Rodezno Ayestas, & Hahn, 2024). The industry is subject to increasing scrutiny from society, who demand greater transparency about production methods and environmental and social impacts (Wognum, Bremmers, Trienekens, Van Der Vorst, & Bloemhof, 2011).

Sustainability reporting frameworks provide a structured approach to capture and communicate these impacts, but still their implementation depends on the ability of firms to collect reliable sustainability data throughout their supply chains. Firms are required to deliver sustainability information that is useful for stakeholders, but, in practice, difficulties of data collection often limit what they can actually report.

Sustainability data collection is a central requirement for companies that aim to demonstrate their accountability and transparency. However, not much is known about the core process of

data collection itself and there is still limited academic evidence on how companies handle supplier information and translate raw data into credible disclosures.

The sustainable food industry represents a relevant context to explore these dynamics. This is because these companies position themselves as frontrunners in sustainability and promote transparency across their value chains. Yet, even firms with strong sustainability commitments face difficulties in accessing reliable data from smaller suppliers and meeting increasing regulatory requirements. This gap between high expectations and practical obstacles reveals a research gap: even if sustainability reporting is expanding under frameworks such as the CSRD, there is a limited understanding of the costs and benefits firms perceive in collecting sustainability data.

This thesis therefore investigates the perceived costs and benefits of sustainability data collection in the sustainable food industry, with the objective of contributing new insights to both academic and policy debates. The aim is to understand how firms manage the task of collecting sustainability-related information, what challenges they face, what costs they bear and what actual benefits or future opportunities they gain from the process.

This study, in particular, seeks to answer the following research questions:

- How do companies perceive the costs and benefits of sustainability data collection along the supply chain in response to European requirements?
- What are the main opportunities and challenges companies face in collecting sustainability data?

The thesis employs a qualitative research design based on semi-structured interviews with three companies that operate in the sustainable food sector in Germany. Interviews were conducted with people directly involved in sustainability functions in order to ensure that the data reflected first-hand experience with sustainability data collection and reporting.

The findings present a complex scenario with both positive and negative aspects. Key challenges include limited availability of reliable data from smaller suppliers, inconsistent metrics and difficulties in ensuring comparability across diverse supply chain actors. In terms of costs, the primary burden identified is linked to personnel expenses. Companies report that collecting and interpreting sustainability data requires substantial time and internal resources. On the benefit and opportunity side, companies acknowledged that sustainability data help strengthen both internal and external processes. Internally, data collection supports efficiency and risk management. Externally, it strengthens public image and improves access to financing. Finally, the findings confirm that the recent regulatory developments are seen as complex and resource-intensive, but they also provide companies with a clearer framework for action. At the same time, uncertainty remains due to ongoing negotiations and the potential simplifications introduced by the Omnibus package.

This study provides empirical evidence on how sustainability reporting is experienced in the food sector. Also, it offers insights that can inform both policymakers and companies. For policymakers, the results highlight the need for clearer guidance, sector-specific standards, better data infrastructures and dedicated support for smaller suppliers. For companies, the study shows that sustainability data collection should be seen not just as a compliance exercise but also as a resource that can strengthen competitiveness and resilience.

The rest of the thesis is structured as follows. Chapter 2 sets out the theoretical and regulatory background of the study, with an overview of sustainability data, a review of academic research on disclosure, a presentation of the CSRD and ESRS, and a short outline of the food industry. Chapter 3 explains the methodology, including the research design, data collection and data analytical approach. Chapter 4 presents the empirical findings, organised around the themes of challenges, costs, benefits and opportunities. Instead, Chapter 5 reflects on the implications of the findings in the light of the literature, including their relevance for policymakers, while also

acknowledging the limitations of the study and suggesting opportunities for future research. Lastly, Chapter 6 summarise the main findings and discussing their broader implications for academic research and policymaking.

2 Theoretical and Regulatory Background

This chapter provides the theoretical and regulatory background for the thesis. First of all, it first examines the role and use of sustainability data in business. It then reviews the academic debate on sustainability disclosure, focusing on the motivations, benefits and drawbacks of reporting practices. Then, the chapter outlines the evolution of sustainability reporting in the European Union, from the NFRD to the CSRD, explaining their scope and requirements. Finally, it considers the specific case of the food industry, which is particularly exposed to sustainability challenges due to its environmental impact and complex supply chains.

2.1 Sustainable Data and its Use in Business

Corporate sustainability performance refers to the ability of a company to operate in a way that safeguards environmental integrity, promotes social well-being and adheres to high standards of governance, while at the same time creating value for shareholders (Ahmad, Yaqub, & Lee, 2023; Luque-Vílchez, Gómez-Limón, Guerrero-Baena, & Rodríguez-Gutiérrez, 2023). To assess such performance, firms must collect and manage both quantitative and qualitative sustainability data across three key dimensions: environmental stewardship, social responsibility and corporate governance (Sandberg, Alnoor, & Tiberius, 2022).

To capture how firms manage their broader impacts, sustainability metrics¹ that refer to the environmental, social and governance (ESG) dimensions have been developed. These metrics aim to capture the effects of corporate activities on society and the environment, including both positive contributions and negative externalities (Kotsantonis & Serafeim, 2019). They encompass a broad range of non-financial indicators, such as greenhouse gas emissions, energy usage, labour practices and anti-corruption policies. Their main objective is to provide an

¹ For the sake of consistency, this thesis uses the term ‘sustainability data’ instead of ‘ESG data’; both terms are used interchangeably in the literature.

accurate measurement of a company's performance on specific environmental, social and governance issues (Kotsantonis & Serafeim, 2019). In today’s world, sustainability data are fundamental to how companies define and communicate their role in addressing global environmental and social challenges.

In particular, the environmental dimension evaluates corporate impacts on the natural environment and covers issues like energy consumption, greenhouse gas emissions, water usage, waste management and biodiversity preservation (Filho, Wall, Williams, Dinis, Fernandez Martin, Mazhar, & Gatto, 2025). The social dimension addresses a company’s impact on society, such as labour practices, community engagement, occupational health and safety and diversity and inclusion. Instead, the governance dimension concerns the organisation’s governance structures and practices, such as board composition and diversity, ethical conduct, risk management, compliance and transparency (Aureli, Del Baldo, Lombardi, & Nappo, 2020; Bosi, Lajuni, Wellfren, & Lim, 2022) (Figure 1).

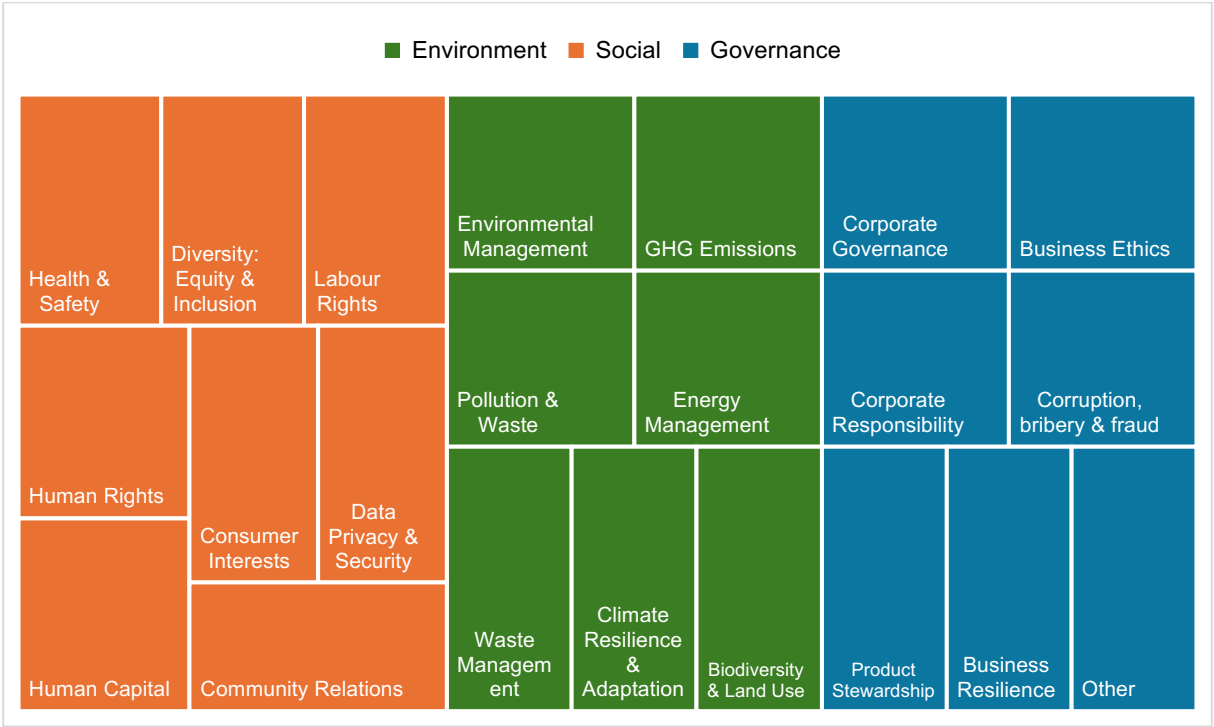


Figure 1 Sustainability metrics coverage by ESG pillars and topics (based on: OECD, 2025a, p. 20)

In the past, the collection of sustainability data was largely voluntary and served mainly as a reputational purpose. Today, sustainability data are increasingly required as a formal method to assess a company's performance and its contribution to sustainable development. In particular, sustainability data are a central component for regulatory compliance and for the formation of sustainability reporting, that is, the disclosure by organisations of information concerning their overall performance and impacts across the environmental, social and governance dimensions (Aureli et al., 2020).

Specifically, sustainability reporting is a tool that allows companies to present a clear and reliable account of their sustainability performance. The very process of collecting and disclosing this information encourages organisations to monitor their progress more carefully and improve their sustainability practices. In doing so, sustainability reporting helps translate sustainability commitments into tangible contributions to long-term value creation and it provides a mechanism for holding companies accountable for their impacts and for stakeholder engagement as it provides information that respond to stakeholders' concerns and expectations regarding sustainability. Also, these reports can strengthen reputation and brand value (Filho et al, 2025).

From a business perspective, sustainability data are considered an important driver of corporate development. They can support innovative activities, strengthen a company's capacity to innovate and contribute to value creation, which in turn may positively affect financial performance (Ahmad et al., 2023). Sustainability data are a tool to not only address stakeholder needs and expectations, but they also serve as an important instrument for identifying and mitigating risks (Esquer-Peralta, Velazquez, & Munguia, 2008).

Sustainability data can support performance tracking over time and supply chain monitoring. When firms compare sustainability performance with industry peers, they can identify areas for improvement and inform strategic decisions to enhance their long-term competitiveness

(European Commission, 2023b). In particular, reliable metrics allow companies to evaluate the effectiveness of their sustainability initiatives, integrate these with operational processes and corporate strategy (Kotsantonis & Serafeim, 2019).

Sustainability data also have a central position in internal risk management. By mapping environmental and social vulnerabilities, such as climate risks or labour controversies, companies can design strategies that reduce reputational and financial damage. This is quite relevant for industries with high environmental impact, such as energy and food production, where the mismanagement of sustainability risks can threaten competitiveness.

The integration of sustainability criteria, in fact, progressively serves as a framework for defining, planning, operationalising and executing company actions targeted at environmental protection, social responsibility and the improvement of overall performance quality (De Souza Barbosa, da Silva, da Silva, Morioka, & De Souza, 2023).

An effective use of sustainability data requires coordination between departments and alignment with sustainable development goals and other corporation goals (De Souza Barbosa et al., 2023). Organisations under growing pressure from investors and society must be able to balance sustainability-related risks and opportunities in the short, medium and long term (Bravi, Santos, Pagano, & Murmura, 2020). In this light, the use of sustainability criteria acts as a reporting framework but acts also as a driver of corporate sustainability by supporting proactive environmental management, social engagement and governance transparency (De Souza Barbosa et al., 2023).

Though the literature highlights various operational uses of sustainability data, evidence synthesised in recent literature also points to the main drivers of sustainability integration. Specifically, Figure 2 shows that the main drivers for integrating sustainability initiatives are the pursuit of long-term goals (52%), followed closely by the desire to strengthen reputation (47%). An important share of firms also emphasises the role of investment risk reduction (37%)

and disclosure requirements (33%) and around one-third highlight the importance of engaging with stakeholders (32%) and exploring new opportunities (27%). Other factors, such as altruistic values (27%), investor pressure (26%) and diversification (20%) are mentioned less frequently but still represent a motivation for sustainability reporting. Taken all together, the results suggest that companies view sustainability as a way to respond to external pressures and also as a tool to secure long-term resilience.

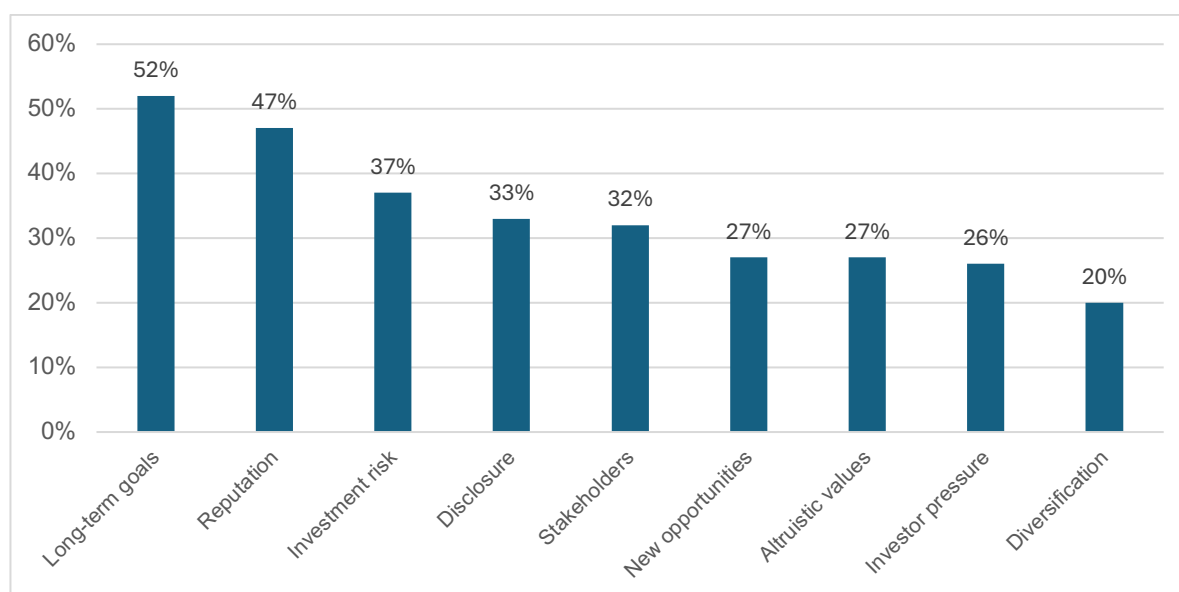


Figure 2 Drivers of sustainability integration in business decision-making (based on Ahmad et al., 2023, p. 2968)

If internally sustainability data are used for tasks such as regulatory compliance and operational planning, externally they are used by investors and stakeholders to evaluate a company's ethical and sustainability performance (Arora & Sharma, 2022). Sustainability data represent an important component of how organisations communicate with investors, banks, regulators and society at large. In particular, the rise of sustainable investment practices has been one of the strongest drivers of demand for reliable sustainable data. Investors increasingly use sustainability data, whether through specific indicators or aggregated ratings, to assess risks, identify opportunities, evaluate corporate impacts and guide capital allocation towards more sustainable and resilient economic activities (OECD, 2025a).

For the investment sector, sustainability metrics are not just auxiliary information but, instead, they are treated as material factors that can affect long-term value creation and risk exposure (De Souza Barbosa et al., 2023). They are used to guide a broad range of investment and voting decisions. For example, they support the identification of risks and opportunities associated with an investment, help reduce portfolios' exposure to financial and non-financial risks and inform both negative and positive screening strategies and in addition, they have a role in prioritising engagement and stewardship activities, by linking executive remuneration to sustainability outcomes, and ensuring compliance with sustainable finance regulations (OECD, 2025a). Within corporate finance, sustainability data are also used to monitor sustainability performance in relation to the use of proceeds from green, social and sustainability bonds (OECD, 2025a).

Sustainability disclosure helps also to reduce information asymmetries because it offers investors and financial institutions more reliable data to support accurate investment decisions. In this sense, voluntary assurance can act as a strategic signal to stakeholders as it reinforces the credibility of sustainability communication, especially when aligned with the Sustainable Development Goals (SDG) related commitments (Krasodomska, Zarzycka, & Zieniuk, 2024). In addition, customers rely on sustainability data to guide their purchasing choices, employees use it to evaluate potential employers, regulators need them to monitor compliance and design effective incentives or sanctions, and Non-Governmental Organisation (NGOs) depend on them to shape initiatives that promote social progress (Kotsantonis & Serafeim, 2019).

However, despite their growing importance, sustainability data collection and use still face substantial challenges. First of all, data fragmentation and inconsistency, caused also by the lack of global standardisation, undermine comparability across jurisdictions and companies. Sustainability metrics are usually reported in heterogeneous formats and use different methodologies. Even within the same industry, firms apply different reporting frameworks,

leading to inconsistencies that reduce the informational value of sustainability disclosures (Filho et al., 2025).

In second place, many companies, especially Small and Medium-sized Enterprises (SMEs), lack the tools or expertise to gather reliable data. Collecting sustainability data along the supply chain, particularly from Tier 2 and Tier 3 suppliers, can be complicated by a lack of knowledge or resources (OECD, 2025b).

Third, sustainability disclosures are also exposed to the risk of greenwashing. In fact, firms that struggle with poor sustainability performance may strategically attempt to emphasise positive aspects while hiding negative impacts (Christensen, Hail, & Leuz, 2021). Without the right precautions or effective control mechanisms, reporting risks turning into a reputational exercise rather than a tool for genuine accountability.

To sum up, sustainability data are increasingly seen as a useful tool that support corporate decision-making and strengthen accountability toward external stakeholders. Challenges, such as inconsistent standards and data collection costs, show that their potential is still only partially realised. The effectiveness of sustainability data therefore depends on reliable and transparent disclosure practices, without which sustainability data cannot fully act as a driver of accountability and long-term development.

2.2 Sustainable Disclosure in Academic Research

The academic debate on sustainability disclosure has increased over the last several years. In the past, sustainability reporting was seen as a minor or symbolic activity, but today it is increasingly studied for its drivers and effects on companies. Scholars examine the motivations behind firms to engage in disclosure, which can range from regulatory compliance and legitimacy concerns to strategic goals such as stakeholder engagement and long-term value creation. Parallel to that, studies investigate both the positive effects of sustainability reporting

like improved financial performance and the potential drawbacks, such as increased costs for companies.

From a theoretical standpoint, two main perspectives dominate the debate for engaging in sustainability reporting: economics-based theory and legitimacy theory.

Economics-based theory argues that firms voluntarily provide information as long as the expected benefits exceed the costs of disclosure (Hummel & Jobst, 2024). According to this theory, corporate disclosure reduces information asymmetries between investors and managers, thereby lowering estimation risk, improving market liquidity and broadening the investor base (Leuz & Wysocki, 2016). It is also expected to lower costs of capital and greater analyst coverage (Healy and Palepu, 2001). Applied to sustainability reporting, this perspective suggests that firms disclose sustainability-related information when transparency generates tangible financial benefits, such as improved access to capital or reduced borrowing costs. However, reporting obligations can possibly alter this cost–benefit balance because they involve both direct costs (e.g., preparation, certification, dissemination) and indirect costs (e.g., loss of competitive advantage, litigation exposure) (Christensen et al., 2021; Leuz & Wysocki, 2016). On the other hand, legitimacy theory emphasises social rather than purely economic motivations. Legitimacy is the common belief that an organisation’s actions are acceptable and appropriate according to the shared norms, values and expectations of society (Suchman, 1995). From this perspective, companies disclose sustainability information to gain, maintain or repair legitimacy in the eyes of stakeholders (O’Donovan, 2002). Empirical studies show that firms with weaker sustainability performance sometimes provide positive disclosures to influence public perception (Hummel & Jobst, 2024). This behaviour is linked to greenwashing, whereby firms selectively highlight positive initiatives and disguise negative practices (Christensen et al., 2021). As a result, scholars argue that detailed and enforceable reporting mandates, supported by sanctions and assurance mechanisms, are necessary to ensure transparency and

accountability (Patten, 2014; Laine, Tregidga, & Unerman, 2022). In this sense, sustainability reporting regulation such as the CSRD can help transform disclosure from a symbolic activity into a substantive governance tool (Hummel & Jobst, 2024).

Taken together, these theories indicate that disclosure is shaped both by economic incentives and by the search for legitimacy with stakeholders, but that the outcomes strongly depend also on the institutional framework and the effectiveness of its enforcement.

Against this theoretical backdrop, research has produced mixed evidence in regard to the relationship between sustainability practices and firm performance. The literature presents two contrasting perspectives on this. The first, often referred to as the cost-of-capital reduction perspective, suggests that the implementation of sustainability strategies involves additional costs, which may negatively affect market valuations and financial outcomes (Buallay, 2019). From this point of view, sustainability efforts are perceived as a financial burden rather than a source of value.

In contrast, the value creation perspective argues that sustainability initiatives can serve as a lever to enhance competitive advantage and stakeholder trust and ultimately improve financial performance. According to this view, sustainability is not merely a compliance issue, but it is a driver of innovation and long-term profitability (Buallay, 2019).

A lot of empirical studies illustrate these opposing interpretations. Some studies support the cost-based view, while others support the value creation perspective. For instance, Mackey, Mackey and Barney (2007) argue that investors generally expect firms to focus on wealth creation without engaging in costly sustainability policies, which, in their view, should be the responsibility of non-profit organisations rather than for-profit companies. Similarly, Marsat and Williams (2014) claim that investments in sustainability practices may increase costs and exert downward pressure on market value. In this perspective, corporate social responsibility (CSR) initiatives are seen as a cost burden rather than a source of value creation.

Conversely, other studies provide evidence of a positive link between sustainability and financial performance. De Souza Barbosa et al. (2023) found that the implementation of sustainability criteria can enhance firm value and that sustainability disclosure can strengthen the alignment with broader corporate sustainability goals. Eccles, Ioannou and Serafeim (2012) similarly found that sustainable firms tend to outperform their peers financially, further supporting the view that sustainability can act as a driver of competitive advantage. In particular, evidence shows that sustainability disclosure reduces the risk of stock price declines, especially in state-owned enterprises, in firms with higher agency costs and in companies at earlier stages of development (De Souza Barbosa et al., 2023). Along the same line, Sharfman and Fernando (2008) show that transparent reporting of non-financial information provides important signals on how firms manage risks, with higher ESG scores generally translating into lower perceived business risks.

These conflicting results reflect the complexity of measuring the real impact of sustainability activities, which often varies depending on different factors such as industry, company size, maturity and stakeholder context. However, even if building and maintaining sustainability policies undoubtedly involves costs, many firms anticipate that these will be offset by long-term benefits (Buallay, 2019).

Sustainability engagement has been reported to be positively related with market-based performance indicators, hence supporting the value creation perspective. At the same time, sustainability adoption is found to negatively affect current financial and operational performance, in support of the cost-based argument (Buallay, 2019). Such ambivalence suggests that the benefits of sustainability practices are likely to manifest in the long run, whereas the costs are more immediate.

Furthermore, it has also been seen that companies with strong sustainability practices tend to access capital more easily and have higher investor trust, particularly when disclosures are comparable and verifiable (Ahmad et al. 2023).

The capital market implications of mandatory disclosure requirements are also noteworthy. According to Krueger, Sautner, Tang, & Zhong (2024), the introduction of mandatory sustainability disclosure significantly improves market liquidity². In particular, bid-ask spreads³ decrease by around 8.4% after the introduction of disclosure mandates. These positive effects are three times stronger when disclosure is mandated by governmental authorities rather than applied on a comply-or-explain basis, and when supported by informal institutional enforcement. The benefits also appear greater for firms operating in weaker information environments (Krueger et al., 2024).

Several studies emphasise that, even if sustainability disclosure involve both direct costs related to preparing and disclosing information and indirect costs related to the loss of competitive advantage as data are revealed to competitors (Gjergji, Vena, Sciascia, & Cortesi 2020), sustainability disclosure can decrease the cost of capital and the cost of debt. In fact, the majority of empirical evidence suggests that the benefits outweigh the costs. Firms engaging in sustainability disclosure enjoy reduced cost of capital (Tarulli, Marrone, Conte, Bussoli, & Russo, 2022) and, in particular, high-quality accounting information can lower a firm's cost of capital as it reduces uncertainty and information asymmetry regarding future performance (Lambert, Leuz, & Verrecchia, 2007).

Similar effects are observed in relation to the cost of debt since companies that provide timely and detailed sustainability disclosures are perceived as less risky borrowers, leading banks and other lending institutions to offer more favourable loan conditions (Gerwanski, 2020;

² Market liquidity refers to the ease with which financial instruments can be traded in the market without significantly affecting their price.

³ The bid-ask spread is the difference between the highest price a buyer is willing to pay (bid) and the lowest price a seller is willing to accept (ask). Smaller spreads indicate greater liquidity.

Mazumdar & Sengupta, 2005). As Goss and Roberts (2011) show, firms with higher sustainability disclosure scores benefit from lower borrowing costs, since transparency improves reputation, profitability and lenders' confidence in repayment capacity (Bhuiyan & Nguyen, 2019). In this context, a negative relationship is generally expected between sustainability disclosure and the cost of debt, as the presence of such information reduces information asymmetries and perceived risk (Tarulli et al., 2022). Empirical evidence also shows that improved creditworthiness and lower interest rates are often associated with reduced financial leverage (Eliwa, Aboud, & Saleh, 2019).

These findings are particularly relevant in sectors such as agriculture, which have a direct environmental impact. In such industries, sustainability disclosures, especially on environmental and social practices, can strengthen creditworthiness, diminish information asymmetries and also mitigate risk (Tarulli et al. 2022).

Still, Jadoon, Ali, Ayub, Tahir, and Mumtaz (2021) found that high sustainability performance alone does not guarantee greater market valuation. But rather, it is the combination of good performance with high-quality disclosure that significantly enhances value relevance. In fact, poorly structured or incomplete reporting reduces the credibility of sustainability information, likely limiting its impact on investment decisions. On the contrary, detailed and reliable sustainability reporting strengthens investor confidence and ultimately increases the informational efficiency of capital markets.

Evidence indicates that regulatory frameworks can play a pivotal role in accelerating corporate action on climate change, as structured sustainability reporting is associated with enhanced environmental performance and lower carbon footprints (Filho et al. 2025).

Yet, sustainability reporting frameworks continue to face significant criticism. On the implementation side, some firms lack awareness of potential benefits or struggle to articulate a clear business case for investing in sustainability reporting (Tang & Higgins, 2022). Others

remain uncertain about the practical steps required to comply with new standards (Filho et al. 2025). Common challenges often include limited availability and quality of environmental and social impact data, but also limitations in human, financial and technological resources for data generation and interpretation, which are issues that are particularly acute for smaller firms (Filho et al. 2025).

Besides, certain key stakeholder groups, such as investors and consumers, might not fully appreciate the significance of sustainability reports (Dissanayake, Kuruppu, Qian, & Tilt, 2021). In such cases, the dominant emphasis on short-term financial performance among investors can overshadow long-term sustainability objectives (Rosati & Faria, 2019). This dynamic increases the risk of sustainability reporting being perceived as a marketing tool rather than a genuine instrument for assessing and communicating sustainability performance, thereby fostering scepticism among stakeholders (Xiao & Shailer, 2022).

In some industries and jurisdictions, the absence of regulatory requirements or institutional support further undermines the implementation of sustainability reporting (Dissanayake et al., 2021), which results in limited external pressure from stakeholders and contributes to a lack of standardisation and global alignment (Filho et al. 2025).

The absence of a universally accepted reporting framework has produced inconsistencies in reporting practices that hindered comparability across organisations and jurisdictions. For example, the Global Reporting Initiative (GRI), which promotes complete ESG coverage, has been criticised for insufficient sector-specific guidance (Filho et al. 2025). Conversely, the Sustainability Accounting Standards Board (SASB) provides industry-specific metrics but retains a predominantly financial orientation, which reduces its applicability across sectors (Filho et al. 2025). Also, the lack of integrated double materiality perspectives within these frameworks further restricts their ability to capture the broader environmental and societal impacts of corporate activity (Aureli et al., 2020). In response to such fragmentation, the

European Financial Reporting Advisory Group (EFRAG), in collaboration with the International Financial Reporting Standards (IFRS) Foundation, has issued guidance on interoperability between EU sustainability standards and other international frameworks (Filho et al. 2025).

In conclusion, the academic literature offers multiple perspective on why firms engage in sustainability reporting and also offers both optimism and caution regarding the role of sustainability disclosure. On the one hand, growing evidence suggests that high-quality sustainability reporting can strengthen firm performance and foster more robust stakeholder relationships. On the other hand, disclosure brings costs and risks, particularly when carried out without clear priorities or sufficient resources. As regulations such as the CSRD become operational, firms will need to go beyond formal compliance and prioritise reliable and decision-useful reporting. Though this transition is far from straightforward, it offers significant opportunities for those willing to invest in the quality and accuracy of sustainability disclosure.

2.3 Overview of the CSRD and ESRS

The CSRD and the ESRS represent a major turning point in how companies in the EU disclose non-financial information. The new regulatory framework raises the expectations on sustainability reporting and aims to bring it up to the same level of quality and consistency as financial reporting.

The CSRD was designed to replace the Non-Financial Reporting Directive (NFRD), which entered into force in 2014. The NFRD marked the EU's first attempt to create a harmonised sustainability reporting framework. It required large public-interest entities with more than 500 employees to disclose non-financial information, including diversity metrics, starting from the 2017 financial year (Hummel & Jobst, 2024).

Although it was an important first step, the NFRD quickly turned out to have its limitations. Only large listed companies with more than 500 employees fell under its scope and the information provided was often inconsistent and difficult to compare. The directive only required auditors to confirm the presence of a non-financial statement, without mandating external assurance of its content. Companies were also free to choose among a wide range of reporting frameworks, and no detailed disclosure requirements were imposed. As a result, evaluations concluded that NFRD reports often lacked comparability, reliability and relevance (Hanhkamp-Vandenbulcke, 2021).

Recognising these shortcomings, the European Commission launched the CSRD with the objective to strengthen transparency and accountability in corporate sustainability disclosures and with the ultimate goal to support the EU's climate commitments and sustainable finance agenda.

One of the most important changes of the CSRD is the wide expansion of scope which is expected to raise the number of companies subject to mandatory reporting from around 11,000 to nearly 50,000 (European Parliament, 2022). Such a change significantly modifies the regulatory landscape because now sustainability disclosure is no longer an exception for a limited group of firms but is an ordinary requirement for a lot of medium and large businesses which operate in the European market.

Companies will be required to report under the CSRD according to a phased timetable (European Commission, 2023a):

- Entities already covered by the Non-Financial Reporting Directive (NFRD), i.e. large listed companies, banks and insurance undertakings with more than 500 employees, as well as large non-EU listed companies of comparable size, must begin reporting for the 2024 financial year, with their first sustainability statements published in 2025.

- Other large companies, including large non-EU listed firms not previously subject to the NFRD, will follow one year later, reporting for the 2025 financial year and publishing their first statements in 2026.
- Listed SMEs, including those which are based outside the EU, will be required to report for the 2026 financial year, with their first statements due in 2027. Yet, they can choose to defer compliance for two additional years, meaning that the latest possible reporting start date is the 2028 financial year, with publication in 2029.
- Finally, from the 2028 financial year, non-EU companies generating more than €150 million in annual turnover within the EU and operating either an EU branch with turnover above €40 million or a subsidiary qualifying as a large company or listed SME, will also be required to report on their group-level sustainability impacts, with the first disclosures published in 2029. For this category, separate reporting standards will be adopted.

As already introduced under the NFRD and maintained in the CSRD, the principle of double materiality requires companies to report both (European Commission, 2023a):

- How sustainability issues affect the company's financial position and performance (financial materiality).
- How the company's activities affect people and the environment (impact materiality).

Compared to the NFRD, the CSRD expands disclosure requirements substantially. Specifically, firms must disclose (CSRD, Article 1, recitals 30–36):

- a description of their business model and strategy in relation to sustainability;
- time-bound sustainability targets, including potential GHG emission reductions, with progress updates and an indication of whether these are science-based;
- information on the role, expertise and skills of administrative, management and supervisory bodies in sustainability matters;
- the organisation's sustainability policies;

- details of sustainability-linked incentives for governing bodies;
- due diligence processes and principal actual or potential adverse impacts across own operations and the value chain, together with mitigation actions;
- sustainability-related risks and their management; and
- relevant performance indicators.

The CSRD also requires companies to disclose data across their entire value chain, and not only direct operations. This is crucial for capturing sustainability impacts; however, it will cause significant challenges, especially in sectors that are characterised by complex supply chains. For the first three years, companies can acknowledge information gaps, but they must explain the reasons and outline efforts to close them (Hummel & Jobst, 2024).

Another key innovation of the CSRD is the introduction of mandatory limited assurance of sustainability reports, with a possible future transition to reasonable assurance. Assurance can be provided either by statutory auditors or other qualified providers. The goal is to improve the reliability of sustainability disclosures, by addressing concerns that voluntary reports often lacked credibility (Krasodomska et al., 2024).

In terms of location and format, sustainability information has to be included in the management report (CSRD, Article 1, recital 57) and prepared in an electronic and machine-readable format (CSRD, Article 1, recitals 55–56).

To operationalise the CSRD, the EFRAG developed the European Sustainability Reporting Standards (ESRS). These standards define in detail what must be disclosed, how and according to which methodologies. The ESRS cover the entire spectrum of sustainability issues: climate change, biodiversity, pollution, water, resource use, social matters (workforce, value chain workers, affected communities, consumers) and governance. They are structured into twelve standards: two cross-cutting (general requirements and disclosures), five environmental, four social and one governance (Figure 3).

Topical standards			Cross-cutting standards
Environment	Social	Governance	ESRS 1 General requirements
ESRS E1 Climate change	ESRS S1 Own workforce	ESRS G1 Business conduct	ESRS 2 General disclosures
ESRS E2 Pollution	ESRS S2 Workers in the value chain		
ESRS E3 Water and marine resources	ESRS S3 Affected communities		
ESRS E4 Biodiversity and ecosystems	ESRS S4 Consumers and end users		
ESRS E5 Resource use and circular economy			

Figure 3 Overview of the European Sustainability Reporting Standards (ESRS) (based on EY denkstatt, 2023, retrieved on 27/08/2025, from <https://denkstatt.hu/en/esrs-standards-explained/>)

ESRS 1 (General Requirements) outlines the overarching principles for reporting under the ESRS but does not prescribe specific disclosure obligations, while ESRS 2 (General Disclosures) defines the core information that must be reported regardless of the sustainability topic addressed and is mandatory for all companies falling within the scope of the CSRD (European Commission, 2023a). The other topical standards are subject to a materiality assessment. This means companies only have to report information that is relevant (“material”) to their business model and activities. However, these disclosures are not optional, if a topic is material, it must be reported, and the company’s materiality assessment is checked through external assurance under the Accounting Directive (European Commission, 2023a).

Unlike alternative standards, the ESRS requires disclosure of the full spectrum of sustainability impacts, which will enable organisations to identify a broader range of opportunities and risks and to foster long-term value creation through more comprehensive sustainability planning (Filho et al., 2025).

Another distinctive feature of the ESRS is their interoperability. The standards have been developed in close alignment with international frameworks, particularly the International Sustainability Standards Board (ISSB) and the Global Reporting Initiative (GRI), with the aim to reduce the risk of duplication and limit the reporting burden for companies operating internationally (Directorate-General for Financial Stability, Financial Services and Capital Markets Union, 2023).

The ESRS are intended to ensure the quality of reported information by requiring it to be understandable, relevant, verifiable, comparable and faithfully represented (CSRD Article 29b, Recital 2). They define the forward-looking, retrospective, qualitative and quantitative information to be disclosed by undertakings, while seeking to avoid imposing a disproportionate administrative burden, particularly in cases where data have to be gathered from value chain actors not subject to sustainability reporting obligations (CSRD, Article 29b, Recital 2). Accordingly, the ESRS prescribes proportionate and relevant value chain disclosures, adapted to the capacities and characteristics of undertakings, especially smaller entities outside the reporting scope. Exceptions apply, for instance, where data collection would require information from small and medium-sized enterprises not otherwise subject to the same obligations (Filho et al. 2025).

Although the CSRD aims to strengthen sustainability reporting, concerns have been raised about the administrative burden it will place on companies, especially on small and medium-sized enterprises (SMEs). In response to these concerns, on 26 February 2025, the European Commission adopted a simplification initiative, also known as the Omnibus package. This package is part of a larger effort to reduce reporting complexity and increase EU competitiveness, with the goal of reducing administrative burdens by 25% for all businesses and 35% for SMEs. It covers several policy areas, such as sustainable finance and investment

regulation, with a strong emphasis on streamlining sustainability reporting (Directorate-General for Financial Stability, Financial Services and Capital Markets Union, 2025).

In particular, some of the main proposed changes to the CSRD are (Directorate-General for Financial Stability, Financial Services and Capital Markets Union, 2025):

- About 80% of companies will fall outside the CSRD scope. Only firms with more than 1,000 employees and either turnover above €50 million or a balance sheet total above €25 million will remain covered.
- A voluntary sustainability standard for SMEs will be introduced to help smaller firms in the supply chains of larger companies avoid excessive data requests. This will limit the type and amount of information larger companies or banks can request from firms with fewer than 1,000 employees.
- The Commission will revise and update the ESRS.
- The obligation to adopt sector-specific standards will be dropped.
- The assurance requirement will stay at the "limited" level, with no shift to "reasonable" assurance.
- EU Taxonomy reporting will apply only to the largest companies (minimum 1,000 employees and €450 million net turnover), while other large companies may still choose to report voluntarily.
- Furthermore, a “stop-the-clock” proposal will postpone CSRD reporting for two years for companies initially supposed to report in 2026 or 2027. This change aims to provide extra time for adaptation and legislative alignment.

According to the European Commission, the proposed changes could save approximately €4.4 billion annually in administrative costs, with one-off savings of €1.6 billion related to CSRD reporting and €0.9 billion for taxonomy-related requirements (Directorate-General for Financial Stability, Financial Services and Capital Markets Union, 2025).

In the context of this thesis, it is important to note the implications of the CSRD for the selected case companies that will be interviewed. Under the original scope of the CSRD, all the three case companies analysed in this study would have fallen under the directive. But as just mentioned, the recent Omnibus Proposal, which is still under discussion and not yet finalised, introduces potential adjustments to the reporting requirements. If adopted in its current form, two out of the three food companies investigated in this thesis will not be expected to be directly affected by the new sustainability reporting requirements. Still, the situation is currently evolving, and new regulatory developments continue to unfold.

Still, indirect effects are possible, since supply chain partners and financial institutions may demand sustainability data aligned with the EU framework.

2.4 The Food Industry

In recent decades, growing awareness of global warming and climate change, which is evidenced by rising temperatures, greenhouse gas (GHG) concentrations and deforestation, has intensified public and academic attention to corporate social responsibility (CSR) issues (Tarulli et al., 2022). This has impacted all sectors of the economy, but the agricultural and food industry has come under particular scrutiny due to its wide environmental footprint (Azzurra, Massimiliano, & Angela, 2019). This sector plays a critical role in the transition to a more sustainable economy, as nowadays it represents one of the industries with the highest ecological impact. The food system is responsible for substantial CO₂ emissions, water pollution and biodiversity loss, making it a central focus in discussions on sustainability (Tarulli et al., 2022). Unfortunately, these effects are likely to worsen in the future due to expected global population growth, which will increase pressure on food production and resource consumption (Reisch, Eberle, & Lorek, 2013).

According to the Food and Agriculture Organisation of the United Nations (FAO), food systems are responsible for about one-third of total anthropogenic GHG emissions. Moreover, in the last 50 years, agriculture has become the biggest reason for destroying natural habitats, while food production is responsible for 50% of the loss of freshwater species and 70% of the loss of land biodiversity (Bakhtary et al., 2024) (Figure 4).

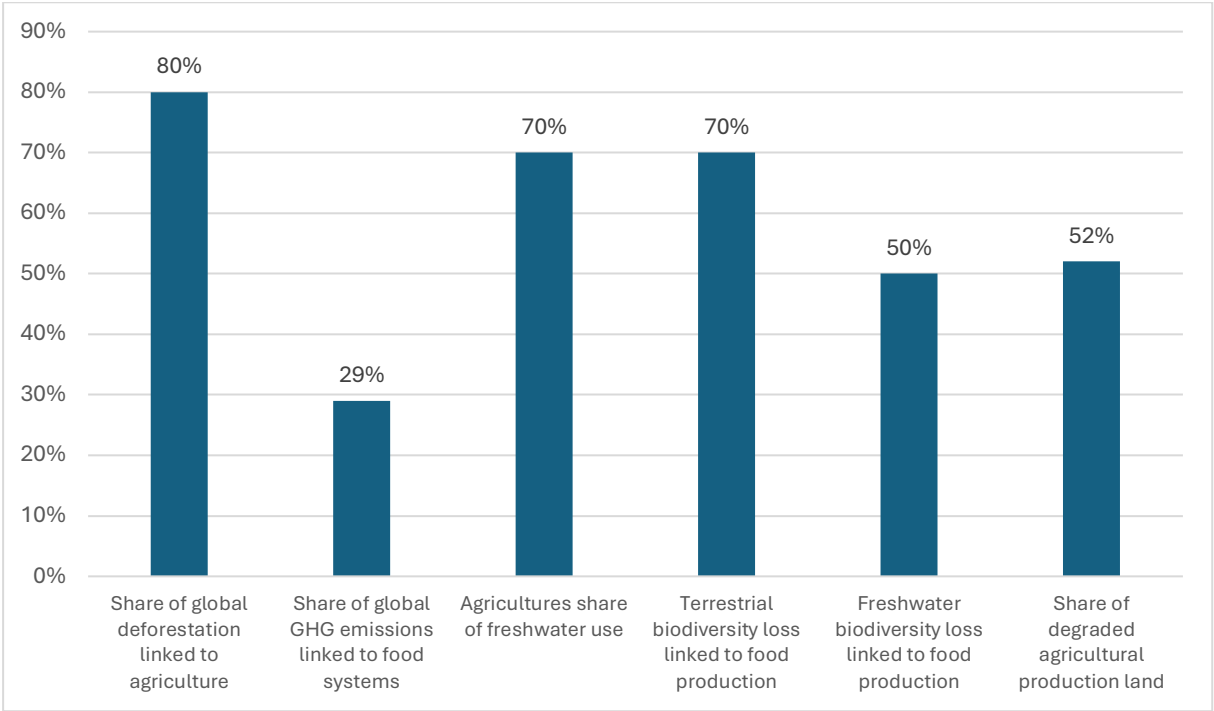


Figure 4 Distribution of the Environmental Impacts of Food Production Worldwide (based on WWF LIVING PLANET REPORT, 2020, p. 61)

The entire food value chain contributes to this negative impact, even if the distribution of emissions is highly uneven. As illustrated in Figure 5, livestock and fisheries alone account for nearly one-third of food-related carbon emissions, while crop production and land use together represent more than half of the total. Instead, the category “supply chain,” which refers to post-farm activities such as transport, packaging, retail and food processing, contributes only marginally to overall food-related emissions.

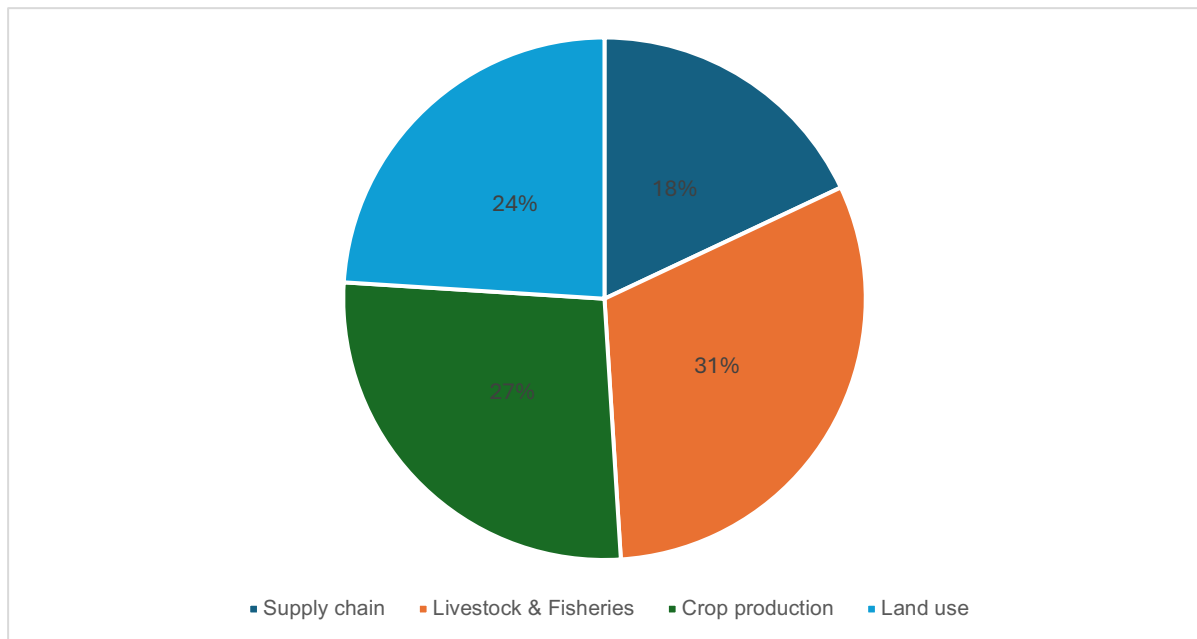


Figure 5 Carbon Emissions in Food Production (based on Our World in Data (2019). Retrieved on 01/08/2025, from <https://ourworldindata.org/food-ghg-emissions>)

Beyond that, agri-food products generate diverse environmental impacts throughout their entire life cycle, including indirect effects from input use (e.g., energy-related emissions), land-use changes (e.g., deforestation driven by agricultural expansion) and waste generation (e.g., food loss and packaging disposal) (Deconinck & Toyama, 2022).

A distinctive feature of the food sector is its complex and fragmented supply chains. From raw material sourcing to processing and distribution, food companies often operate within global value chains that can be opaque. One of the main reasons is that food supply chains involve a multitude of actors that have different capacities, knowledge, priorities and digital readiness levels (Wognum et al., 2011). This heterogeneity makes it difficult to ensure uniform environmental performance along the supply chain. As a result, the measurement and management of sustainability data become a lot of more challenging and also more critical (Deconinck & Toyama, 2022). In this context, collecting detailed sustainability data along the supply chain is essential as it enables the identification of the stages that contribute more significantly to environmental degradation and can help direct efforts to improve environmental performance where they are most needed. Such data can highlight the differences in

environmental performance among products, technologies, producers or production systems, thereby allowing firms to benchmark their practices and adopt more sustainable approaches. Governments, instead, can use this information to design more targeted and effective policy measures and, where possible, to incentivise firms based on their environmental performance (Deconinck & Toyama, 2022).

New technologies such as blockchain, IoT devices and cloud-based traceability platforms are presented as tools which can help strengthen transparency and data accuracy because they can facilitate and support of the verification and communication of sustainability information across all supply chain tiers (Wognum et al., 2011). However, these innovations require shared governance structures and a collaborative approach among supply chain actors. Without these conditions, systemic sustainability improvements remain difficult to achieve, especially for small producers or suppliers operating upstream in the chain (Wognum et al., 2011).

In this broader context, an increasing number of companies are positioning themselves within the sustainable food industry, a sub-sector that aims to reduce environmental footprint and support more ethical and more transparent practices. Typical features of these companies include, for instance, commitments to organic agriculture, low-impact production methods, shorter supply chains and fairer labour conditions. Many go beyond legal compliance by voluntarily adopting strict standards and engaging in sustainability certifications, such as EU Organic or Fairtrade.

This sector has experienced a significant growth in recent years, driven by rising consumer awareness. In fact, consumers are increasingly interested in where their food comes from, how it is produced and whether it is safe and sustainable. Past food crises, such as dioxin contamination and avian influenza, have increased public awareness of food safety and ethical production and have led consumers to become more critical and demanding about the quality, origin and environmental impact of food products (Wognum et al., 2011).

At its core, sustainable food production is grounded in values of increased awareness and empowerment (Qu, Xiao, Upadhyay, & Luo, 2024). In contrast to traditional food production, sustainable food production is characterised by environmental stewardship, which means that natural resources such as water, land and energy are used in a way aimed at safeguarding their long-term availability. Measures such as adopting renewable energy and reducing the use of synthetic pesticides and fertilisers further contribute to the transition towards this production systems. Sustainable food production also focuses on social responsibility by promoting fair and ethical labour practices, such as fair wages, safe working conditions and equal rights for all workers, while also protecting biodiversity and supporting small-scale family farms. Strengthening local food production and reducing transport distances can benefits local economies and also helps cut carbon emissions, which can otherwise account for up to half of the footprint of fruits and vegetables (Qu et al., 2024).

In the context of the EU, it is worth mentioning organic farming which represents one of the most established expressions of sustainability within the European food industry. Defined as a production method based on natural substances and processes, it aims to limit environmental impacts by encouraging the maintenance of biodiversity and water quality, soil fertility and the responsible use of energy and resources. It also includes strict requirements for animal welfare, ensuring that livestock management meets specific behavioural needs (European Commission, 2025a). To guarantee consumer trust, the EU maintains a robust system of control and enforcement: producers and distributors must register with authorised control bodies, undergo annual inspections and obtain certification before they can market their food as organic. Imported organic products are subject to the same standards. Recent legislation has further strengthened this framework, with new rules to support small farmers, harmonise import standards, strengthen the control system and broaden the range of products that can be certified (European Commission, 2025a).

Even if we mentioned how consumers play a significant role toward sustainable food practices, it is important to note that consumer demand alone cannot drive systemic change. Governments and financial institutions also have a decisive influence in shaping sustainability practices. Indeed, public authorities, with regulatory frameworks such as the CSRD and the ESRS, define and create rules or sanctions that firms must follow. Financial institutions increasingly condition access to credit or investment on the disclosure of reliable sustainability data. The rising focus on ESG issues has also made lenders more aware of reputational risks (Eliwa, Aboud, & Saleh, 2021): if borrowing firms engage in harmful practices, banks may be perceived as enabling them, which can trigger negative stakeholder reactions. These risks create strong incentives for financial institutions to integrate sustainability data into their creditworthiness assessments (Eliwa, Aboud, & Saleh, 2021).

Although progress toward a more sustainable food industry is evident, several challenges still remain. One recurring issue concerns the costs of sustainability. Efforts to implement more sustainable and ethical processes often involve considerable expenses, and for smaller producers these costs can be very high. Even if, in the longer term, sustainability initiatives might create value by strengthening consumer loyalty and by enhancing brand reputation.

A second trade-off concerns the higher prices of sustainable food products compared to conventional products. These price differences are due to, among other factors, higher material costs, smaller production scale and fair labor practices. As a result, sustainable products often result in higher product prices, and this makes them less affordable and competitive in large markets. Moreover, by prioritising local sourcing and partnerships with small farms, local systems might struggle to meet global demand or achieve economies of scale, which can further contribute to higher prices.

A further concern relates to greenwashing and the actual credibility of certification schemes. Labels and certifications can certainly provide assurance, yet they are sometimes employed

more as marketing devices than as evidence of real progress. Third-party certification in the agri-food system are often an attempt to reinforce organisational legitimacy and to offer reassurance to stakeholders without necessarily transforming practices (Hatanaka, Bain & Busch, 2005). This concern connects directly to the issue of greenwashing as companies can strategically highlight selected positive aspects of their sustainability record through certifications or labels, while covering negative externalities. This risk reinforces the need for robust and verifiable sustainability data, aligned with regulatory standards such as the CSRD and ESRS.

In conclusion, the food industry stands at the centre of the sustainability challenge. Its wide environmental footprint and complex supply chains make data collection and sustainability reporting essential. Even if sustainable food companies show that alternative models are possible, the entire sector still faces a lot of challenges. Because of that, building reliable systems for sustainability data is a key to ensure that commitments translate into real environmental and social improvements.

3 Methodology

This chapter outlines the methodological approach adopted for the study. It first introduces the overall research design, then it describes the data collection process, focusing on the semi-structured interviews conducted with three case companies operating in the sustainable food industry. Lastly, the chapter describes the data analysis method used to analyse the interview material.

3.1 Research Design

The thesis utilises a qualitative research design to investigate the costs and benefits of sustainability data collection in the context of regulatory requirements. This approach is particularly suitable for this study because the objective of this thesis is not to measure the costs and benefits of sustainability data collection in quantitative terms, but rather to explore how they are perceived by the companies. A qualitative design allows to capture subjective views and nuanced experiences that would be difficult to represent through quantitative methods alone.

The thesis follows a multiple case study approach, focusing on three small medium-sized companies based in Germany and active in the sustainable food industry. In particular, the sample includes:

- Firm 1: a sustainable food brand,
- Firm 2: an organic food wholesaler and
- Firm 3: an organic supermarket chain.

3.2 Data Collection

Primary data were collected through semi-structured interviews with company representatives directly involved in sustainability-related tasks. The aim was to capture the perspectives on the collection of sustainability data, with particular attention to perceived burdens, opportunities and the effects of regulatory changes.

Participants include employees who have direct knowledge of sustainability data collection. The companies were contacted with the support of Climate & Company, a think tank specialised in sustainable finance that works on various projects aimed at promoting the sustainable transition in Europe. The three companies were reached out to via email and invited to take part in a voluntary interview.

To encourage open responses, participants were assured full anonymity and, therefore, no company details or individual identities are disclosed in the thesis.

The interviews followed a semi-structured format and were conducted using a predefined guide. The interview questionnaire included 12 open-ended questions that addressed several key topics:

- Background and early motivations for collecting sustainability data;
- Reactions and adjustments related to the introduction of the CSRD;
- Costs and resource implications of data collection;
- Main challenges encountered;
- Benefits and internal improvements linked to sustainability data;
- Future opportunities and long-term outlook;
- Reflections on regulatory frameworks and support needs.

Also, where appropriate, follow-up questions were used to get clarifications or more detailed examples.

As already said in the previous chapter, under the original scope of the CSRD, all the three case companies analysed in this study would have fallen under the directive, but as a consequence of the new Omnibus proposal, two of them are now expected to be exempted from direct reporting obligations (Firm 1 and Firm 2), while only one would likely remain in scope (Firm 3). Because of that, questions were adapted considering the CSRD relevance for each company. All interviews were conducted between July and August 2025, using online video conferencing platforms. Each interview lasted between 30 to 40 minutes. In two cases, one participant was interviewed; in another, two representatives from the same company were interviewed together in a joint session. All interviews were conducted in English and were audio-recorded with the agreement of the participants so that accuracy in transcription and analysis could be ensured. Interviewees were informed in advance of the research purpose and use of data. A translated version of the interview guide in German was provided where needed to facilitate understanding. Audio recordings were transcribed shortly after each interview. Transcripts were anonymised by removing names, job titles, company names and any other potentially identifying information. The anonymised transcripts are the basis for the following data analysis and findings discussed in Chapters 4.

Alongside this, secondary data were gathered to support the theoretical framework and contextual background of the study. This included a broad screening of academic papers retrieved through EBSCOhost and Google Scholar with key keywords such as “sustainability data”, “sustainability disclosure” and “ESG reporting”. To ensure academic quality, the thesis relied mainly on articles published in journals ranked A to C according to the VHB-rank classification. In addition to academic literature, institutional reports and policy documents from organisations such as the OECD and the European Commission were used.

3.3 Data Analysis

To analyse the qualitative data collected through the interviews, this thesis relied on a manual approach instead of a specialised software. All interviews were first transcribed shortly after each session, and identifying information was removed to ensure the full anonymity of participants.

The transcripts were then carefully read several times to develop a general understanding of the content. During this process, different colours of highlighters were used to distinguish between main themes and subthemes, and written notes in the margins were also employed to capture first impressions and also potential connections across interviews.

After the first readings, an initial set of thematic categories was identified, including challenges, costs, benefits, opportunities and perceptions of regulation. As the analysis progressed, subthemes were added step by step when new insights appeared. For example, under “Challenges”, specific subcodes included supplier data gaps, and under “Costs” the main focus was on personnel expenses.

The transcripts were then examined line by line, with relevant passages marked and annotated according to the coding structure. In particular, the use of multiple colours and written annotations made it possible to quickly identify recurring topics and to compare perspectives across the different three companies.

The final stage of analysis involved synthesising these highlighted segments and notes into a coherent thematic structure, aligned with the research questions. Verbatim quotes were selected to illustrate the findings and provide direct evidence of participants’ views, which are presented in the next chapter.

4 Findings

In this chapter, the empirical findings from the interviews are presented and analysed in detail. The results are structured according in four main sections. The first part, Section 4.1, focuses on the challenges that firms encounter when collecting sustainability data. Section 4.2 then turns to the costs associated with this process. Section 4.3 examines the benefits that companies derive from sustainability data. Lastly, Section 4.4 discusses the opportunities that emerge from this practice. Each section combines thematic analysis with illustrative quotations from the interviewees.

As already discussed previously, all three case companies were initially expected to fall under the CSRD. However, with the Omnibus proposal Firms 1 and 2 are no longer directly affected, whereas Firm 3 remains within the directive's coverage.

4.1 Challenges

The analysis of the interviews reveals that companies several challenges when collecting sustainability data. These barriers affect both the quality and the availability of data, as well as the ability of firms to integrate and interpret data in line with regulatory requirements.

The most evident challenge concerns data availability from suppliers. Across all interviews, interviewees emphasised that smaller suppliers frequently lack the resources or expertise to provide the requested information. As one respondent explained, “availability from the delivery chain is complicated because often our suppliers are very, very small companies and they don't get the time, the manpower, the financial capabilities to collect these data for themselves. So that's why they are not able to deliver some data” (Firm 2). Another respondent described a similar difficulty, pointing out that even simple questionnaires are rarely completed: “we now send questionnaires to the suppliers and it's very difficult to get all the information from them although it's very easy and like questions which are not very hard or shouldn't be hard to

answer” (Firm 3). In such cases, companies have to estimate figures or carry out their own calculations to fill these gaps. For another interviewee, the problem was even more acute: “the biggest issue is just getting any data at all [...] If you go back down to the agricultural raw material acquisition in 99% of the cases of the supply chains we analyse, we don’t get any data from the origin of the food” (Firm 1).

To mitigate this, firms occasionally provide direct support to their suppliers, although the scale of assistance remains limited. One firm described their efforts as follows: “in the amount we could offer it [...] if somebody got questions or if I could help with explaining how calculation methods are going to work or where to find some CO₂ equivalents, yeah, I do this. But not on a bigger scale for now” (Firm 2). Another respondent emphasised that long-term relationships and trust made suppliers more willing to share information: “it’s easier to get data from suppliers we know a little bit longer because they know us better as well” (Firm 1).

Even when suppliers do respond, the level of detail and reliability of the data can be highly inconsistent. One company stressed that “getting data at all is the biggest issue and then harmonising it because the level of detail is so different is the next issue” (Firm 1). In the same way, differences in calculation methods create further barriers: “if they calculated the emissions in another way than we did [...] we can’t really work with it” (Firm 2). These inconsistencies reduce the comparability of data and increase the workload of sustainability officers, who must adapt supplier information to internal reporting standards.

This issue is compounded by asymmetries of power in supply chains. Smaller brands often depend on larger suppliers, which limit their ability to enforce requests. As one interviewee said, “we don’t have so much power because we’re not a very big company and mostly our suppliers are bigger than us. So [...] they have more power over us than we have over them” (Firm 1). In such cases, companies rely heavily on communication and long-term trust-building:

“our biggest lever is just communication, having the right timing, the right tone, the right level of data requests [...] it’s a lot of communication, interaction and trust” (Firm 1).

Another frequent challenge is represented by the difficulty of using data internally. Companies often lack clear processes and face challenges in handling the flow of information from suppliers into their own systems. One respondent described the problem in practical terms: “there is always the question of how the data gets into the company, how it is processed, and which systems need to be used” (Firm 3). In their experience, even when data is provided, “it doesn’t mean it can be used. The challenge lies in the many different systems and necessary interfaces” (Firm 3). In addition, the reliability of the information itself is questioned: “the interpretation of data is not always easy, and I often question the quality of the data behind data-based statements. You can always make data look nicer than it really is. True to the motto: don’t believe statistics you didn’t fake yourself” (Firm 3).

Apart from operational barriers, the interviews reveal challenges linked to the complexity of the regulatory framework. Respondents consistently described the CSRD and ESRS as difficult to understand and apply. One respondent stressed that “the whole thing is very complex, and you have to become an expert to understand and apply the regulations. That’s not something you can do casually” and that ESRS are written in overly technical language: “the language is not very easy. So, it’s quite high level and you have to read things twice or even more times to understand what they want” (Firm 3).

To deal with this complexity, companies have expressed appreciation for initiatives that help translate regulation into practical guidance. The German Sustainability Code (DNK) was mentioned as an example, since it paraphrases the ESRS requirements in more understandable language and provides a free digital tool for companies to help structure their reports. One interviewee explained: “I’m very thankful for this platform from the German Sustainability Codex because they translated the wording of the ESRS in more usual language. And that’s

quite helpful because it's quite complicated to read the standards” (Firm 2). Similarly, another firm said: “in Germany we have this DNK, Deutscher Nachhaltigkeitskodex, and they try to put the ESRS in other words and they have an online tool and make it more easy to understand.” (Firm 3). Generally, companies highlighted that free tools and external support, such as templates and examples tailored to the food industry would make compliance more manageable and comprehensible.

A further limitation relates to sector specificity. Companies felt that ESRS are designed primarily for manufacturing industries and fail to capture the unique characteristics of food supply chains. As one respondent argued, “creating one standard for all industry, I don’t see that it’s very useful [...] if it comes to foods, you need to know where your raw material comes from and what impact it has there on biodiversity. And I feel like this is not very well covered” (Firm 1). Another partly agreed with this view, noting that biodiversity standards in ESRS consist largely of qualitative questions and lack measurable Key Performance Indicators (KPIs), which makes them difficult to apply in practice (Firm 2). For food companies that operate as brands or traders rather than manufacturers, this mismatch is particularly evident: “in my opinion, [the ESRS were] almost entirely written for manufacturing companies and only really adaptable to a manufacturing company and not to a trading company or brand” (Firm 1). Lastly, interviews revealed that the materiality assessment is one of the most difficult parts of reporting. Indeed, under the principle of double materiality, they must assess both the effects of sustainability issues on the company and the effects of the company on society and the environment. This is seen as a highly resource-intensive process: “it’s a very complex process. It needs a lot of time [...] you also have to call stakeholders from inside and outside of your company” (Firm 2). For smaller firms with limited staff, this obligation represents a significant burden because it can divert resources away from other priorities.

Regarding the process of collecting sustainability data becoming more structured with the CSRD and the ways in which companies reacted to its introduction, the interviews suggest that these perceptions must be understood in relation to how reporting was handled before the directive was announced, when all three initially expected to fall under its scope.

The interviews reveal that the three companies had already embarked on sustainability data collection prior to the introduction of the CSRD, even if the degree of structure and formalisation varied. For one firm, data collection was described as relatively structured from the beginning, driven by internal standards and strategic priorities rather than regulatory pressure: “I don’t think CSRD has really changed anything regarding our data collection [...] we have really clear requirements, what we want for all of our supply chains and products” (Firm 1). The company emphasised that, even with some flexibility, its internal expectations were already high and comparable to external standards. Another company similarly stressed that its initial engagement with sustainability data was motivated internally rather than by compliance: “we started with our sustainability and reporting and data collection in 2020 [...] we got the motivation by our own to start with the process” (Firm 2). The firm also noted that the CSRD announcement did not trigger immediate changes. However, with the phasing out of the German Sustainability Code (DNK), they are now starting to adapt to the ESRS, which is expected to significantly affect their reporting and risk assessment processes. The third company, instead, described a more fragmented but evolving trajectory. Early data collection was facilitated by N-Monitor, an industry tool developed within the BNN (Bundesverband Naturkost Naturwaren)⁴, which allowed firms to input sustainability data and generate reports. After this tool was discontinued, reporting continued in-house, culminating in sustainability

⁴ The Bundesverband Naturkost Naturwaren (BNN) is the German Association of Organic Processors, Wholesalers and Retailers. It represents the political and economic interests of the organic food sector and promotes sustainable, resource-conserving, and socially responsible business practices (Bundesverband Naturkost Naturwaren e.V., 2025).

reports in 2018 and 2021. Later, the company adopted EMAS, which expanded the scope of environmental data collected. Reflecting on the shift, the interviewer recognised that the process has become “definitely more complex [...] before that it was more on the surface. And now with the materiality analysis, it makes it more complex of course in the beginning” (Firm 3). Overall, the evidence suggests that the CSRD reinforced and formalised existing approaches to sustainability data collection, rather than introducing the practice from scratch. Companies with strong internal motivations and sectoral initiatives had developed structured systems even before regulatory requirements, while others operated with lighter frameworks that have since become more detailed.

To conclude, the challenges in sustainability data collection identified in the interviews include the limited capacity of suppliers, the variability and inconsistency of the data provided, the absence of free and standardised databases, the difficulty of integrating data into internal systems, the complexity and generic nature of ESRS, and the time-consuming nature of materiality assessments.

4.2 Costs

The evidence from the interviews demonstrates that the collection of sustainability data produces substantial costs for companies, even if the specific configuration of these costs varies across organisational contexts. The findings suggest that costs are primarily associated with human resources and the tools and databases required to process and validate information. In addition, expectations regarding the impact of the CSRD diverge and this reflects both current reporting status and company-specific approaches to sustainability.

The most significant cost category across all three cases is internal personnel. Sustainability reporting requires considerable human resources, often creating entire roles dedicated to the collection and interpretation of data. One respondent described how “there are definitely a lot

of internal costs. So capacity that my colleagues and I and other people in the company have to have for collecting this data and understanding data and so on. So there's the costs for the people, like for their wage we have to pay" (Firm 3). Another said, "personnel costs or costs for staff are the highest costs because I only work in this field and yeah, I'm the most cost-driving person in this area" (Firm 2). Also, the first company highlighted the need for additional resources dedicated to managing supplier relationships and continuous communication: "since we don't have our own production and all of our data needs to come from our suppliers [...] that is a lot of capacity [...] a lot of communication" (Firm 1).

Another category of costs is external software and tools. One firm said that it had to acquire specialised digital platforms to manage supplier self-disclosures and reporting requirements. In fact, as one respondent explained, "sometimes it's necessary to have software or to get new software and that's very expensive of course" (Firm 3). By contrast, another firm declared that it keeps technical costs low by relying on Excel or limited software, thereby shifting the burden back onto staff time: "technical costs, not so much because we just got a little software for the corporate footprint and that's not so expensive. And for the rest, we work with a lot of Excel and that's for free" (Firm 2).

The distinction between recurring and one-time costs was also emphasised. Recurring costs include staff salaries and ongoing supplier engagement, while one-time investments are associated with infrastructure upgrades or technical installations. For example, one firm explained: "the personal costs are recurring costs and one-time investments we also got in the case of, for example, technical installations" (Firm 2).

A third dimension involves data collection itself. Companies pointed to the limited availability of open-access and standardised datasets for country-based CO₂ equivalents, particularly in Germany, which forces them to purchase costly proprietary data or rely on incomplete foreign databases. As one interviewee emphasised, "there is not a lot of CO₂ equivalent data for free

available in the market [...] these databases that are available are very cost intensive and I don't understand why, for example, in Germany there is no free or big free data available" (Firm 2) and added that due to this scarcity, their company had to rely on datasets published by the British government: "we also work with that because they are free" (Firm 2). This scarcity increases costs indirectly as it requires additional time to adapt or recalculate figures, and directly, through the purchase of external data sources. The absence of sector-specific databases was mentioned as a recurrent frustration, which raises the cost of compliance without necessarily improving the comparability of results.

When discussing whether the CSRD would increase these costs, companies provided divergent perspectives. The firm already preparing for CSRD compliance (Firm 3) confirmed that costs had already risen due to the preparatory work: "internal costs certainly have [increased], because we devote considerable resources to preparing the reports." This respondent also noted that the rise in costs cannot be attributed solely to CSRD, as overlapping frameworks such as the Eco-Management and Audit Scheme (EMAS)⁵ and the Lieferkettengesetz⁶ also impose significant demands. The other two companies, not formally within the CSRD scope, were asked to consider a hypothetical scenario. The first suggested that compliance would likely raise costs, particularly through additional documentation and third-party verification requirements: "we would have always checked what the requirements are according to CSRD and also maybe need to adjust the documentation a little bit [...] we would have needed to double check that" (Firm 1). By contrast, the second argued that in their specific case costs would not change substantially, since they had already chosen to invest in sustainability

⁵ The Eco-Management and Audit Scheme (EMAS) is the European Union's management system for environmental performance. It requires participating organisations to establish processes for monitoring, reporting and continuously improving their environmental impact (European Commission, 2025b).

⁶ The Lieferkettengesetz (Supply Chain Act) is a German law on corporate due diligence in global supply chains, in force since January 2024. It requires large companies to manage risks, take preventive measures and report annually on their supply chain practices (Bundesministerium für Arbeit und Soziales, 2025)

reporting independently: “nevertheless, if there is a CSRD or not, we had the costs in both cases” (Firm 2).

Overall, the findings illustrate that sustainability data collection imposes some costs on firms, primarily in the form of recurring staff expenditures, complemented by the high price of software and databases in some cases and one-time investments in infrastructure. All companies expect sustainability reporting to remain a resource-intensive process, still their views on the impact of CSRD diverge. In particular for firms already heavily engaged in sustainability reporting, compliance may only formalise existing costs, whereas for others it could introduce substantial new burdens related to documentation and verification.

4.3 Benefits

Even if sustainability data collection is often resource-intensive and time-consuming, through the interviews it is also evident that companies have experienced some benefits. These are visible both at the internal level, through learning and efficiency gains and also at the external level, in terms of reputation and stakeholder trust.

One of the clearest benefits is reputation and external perception. Publishing sustainability reports allows companies to demonstrate their commitment and to strengthen their public image. One manager highlighted that “the reports in 2021 had a positive impact on the public perception and we won the German Nachhaltigkeitspreis, the big sustainability award in Germany. So, it was a lot of public relation and that was good” (Firm 3). Similarly, another explained that sustainability reporting is essential for their identity as an impact-oriented brand: “we define ourselves as an impact company. And if we don’t have the information why we achieve impact or maybe are in some products or patterns better [...] we cannot talk about it” (Firm 1). Even in contexts where customers already trusted the company, reporting was described as a reinforcement of that trust. As one respondent noted, “our customers also tell us,

yeah, it's great that you do it, but we also already trusted you before we reported. But they are also happy that we did it or that we strengthened our reporting and our commitment in this area" (Firm 2).

Other than external reputation, sustainability data collection has supported internal learning and helped firms achieve efficiency improvements. The interviewees described how data analysis supported them in identifying inefficiencies and setting specific targets. One interviewer explained that "it strengthens our own company inside analysis, because we are free to collect the data needed for these CO₂ emissions [...] it helped us with our energy analysis for the already mentioned upgrade of our photovoltaic production" (Firm 2). Another stressed that sustainability data is used into structured goal-setting: "in EMAS we wrote down goals we want to achieve, where data is the basis. So, in EMAS we have to collect this data every year and then we want to achieve our goals" (Firm 3).

At the same time, several respondents said that sustainability data has already generated tangible financial savings, particularly by reducing energy consumption. As one interviewee noted, "when you have energy, for example, it costs a lot and when you can decrease your energy level [...] then it's good for the company because you can save money" (Firm 3). Other than cost reductions, sustainability reporting also enhanced risk identification to help companies to anticipate vulnerabilities and avoid potential problems. As one manager noted, "maybe a little bit risk management, avoiding products which don't fit our brand or our values [...] we hope we make our work so good that we don't ever have any reputational issues" (Firm 1), while another said, "it helped to identify risk opportunities" (Firm 2).

The interviews further revealed that sustainability data supported companies in gaining a clearer view of their supply chains and in improving their internal processes. One participant explained that the main benefit is "the knowledge about which data matters and which is relevant to collect," describing this as the first step towards better decisions, this is because it helps the

company “to explain why we choose certain products or we don’t choose certain products” and to open discussions about “why [these supply chains] are better or interesting or maybe what’s hotspots” (Firm 1). Although the process was described as “a little bit floppy,” the interviewee stressed that it still provides a useful basis for decision-making. Another firm emphasised that reporting “definitely also [helps] to establish processes within the company to make the company more professional and efficient” (Firm 3).

Even when benefits are not immediately visible or quantifiable, firms recognise that sustainability reporting supports more structured decision-making. The process of collecting and systematising data creates a framework that guides procurement choices and product development. Still, the marketing and sales function is where the benefits are most clearly perceived, as sustainability data provides concrete narratives that can be communicated to customers and stakeholders. As one manager explained: “just the benefit is easiest to grasp within our marketing and sales efforts. But we also use it internally with our procurement department to, in general, select suppliers [and] steer a little bit also our product development. But it’s something which is not so clearly transferable to a very clear benefit” (Firm 1).

The interviews also addressed the role of sustainability data has in better access to finance. In fact, reporting is progressively more relevant for financial institutions, which demand evidence of sustainability practices. Even if the degree of impact varies, companies reported that banks increasingly take sustainability information into account. One firm explained: “we had one bank, they sent a questionnaire to us, and we had to fill it out and answer them and give them data and that’s the basis for them to work with us and give us financial support” (Firm 3). Another confirmed that banks appreciate reporting, even if only as an additional signal: “banks are very happy to see that we got a corporate carbon footprint and do sustainability reporting. But just very few of them really ask for it. It’s more like a bonus point. Oh, you have it, great” (Firm 2).

To sum up, the benefits of sustainability data collection identified in the interviews stem from external reputation and recognition to internal efficiency and risk management. The specific advantages differ depending on company profile, but still all three firms confirmed that reporting creates value beyond compliance, strengthening both internal and external relations.

4.4 Opportunities

Looking ahead, the interviews also explored the forward-looking opportunities that sustainability data collection may provide. Perspectives varied across the three companies depending on their positioning, but they all agreed that sustainability reporting is not only a regulatory requirement but also holds potential as a long-term asset.

For some companies, the opportunity lies in maintaining competitiveness and strengthening market positioning. One firm explained that data is central to their brand identity: “100%. That is, I think, one of our strategic pillars or reason for existence, that we think we do better work in sustainability, and that’s why people buy us” (Firm 1). Another emphasised that customers and partners increasingly expect transparency: “it’s very important to collect this data and yeah, this will probably increase [...] because they or the partners they want to know what we are doing and they want to have proof and the data is in most cases the proof for the things you say” (Firm 3). This may suggest that sustainability reporting is becoming a baseline expectation in business relationships as it reduces reputational risks and reinforcing customer loyalty. At the same time, not all firms saw reporting as a unique selling point. One interviewee suggested that “a lot of companies in the oil sector are doing some sustainability reports [...] I think we don’t have this unique selling point in this area” (Firm 2). In the same way, another firm stressed that although reporting consolidates its reputation, it does not necessarily create new advantages: “people expected since our company was founded 25 years ago. So, maybe other

companies which are not that sustainable yet, maybe for them it's more potential, but yeah, definitely" (Firm 3).

Firms also believe that sustainability data could unlock further efficiency gains and future cost reductions. For example, one respondent noted that sustainability data helps them "to identify internally potentials we still don't use" (Firm 3), while another stressed that collecting sustainability data will help "reduce energy and diesel, CNG, LNG and stuff like that, because it's good for the environment and it's good for our costs" (Firm 2). These examples show that opportunities are not limited to reputation but that they also extend to operations, with anticipated financial savings from more sustainable logistics and more efficient energy use.

Overall, the interviews suggest that sustainability data collection offers a wide range of future opportunities. In fact, reporting can help increase competitiveness and meet rising customer and partner expectations. It can create more efficiency gains and helps avoid risks. Also, for companies that already position themselves as sustainability leaders, reporting serves to strengthen this identity. Instead, for others, it can become a means of differentiation in the market. Although the perceived magnitude of these opportunities varies, all three companies agree that sustainability reporting will continue to be significant in the future and increasingly become part of core business strategy.

To conclude, the final reflections of the interviewees provide further valuable insights. All three companies indicated that they would continue to collect sustainability data even if the law did not require them, because they see it as strategically useful. One firm described CSRD primarily as an "opportunity," even if it acknowledged that the first years would involve extra work. Another firm said that it would continue reporting even without legal pressure, though "maybe not to the same extent" (Firm 3). In this case, the interviewed explained that the company would probably prioritise the most relevant data, rather than collecting all of the indicators formally required under the ESRS.

Finally, the three companies pointed to what would make reporting easier for them:

- more guidelines, examples and templates tailored to the food industry;
- more free digital tools such as the DNK platform;
- country-based CO₂ equivalents databases, especially for Germany;
- and standardised platforms for data exchange across supply chains.

5 Discussion

This chapter discusses the findings of the study in the light of the existing research. The previous section described the results of the interviews, while this following analysis interprets them and shows where they confirm or contrast with what earlier studies have found. The chapter is divided into three parts: Section 5.1 compares the results with the academic literature, Section 5.2 draws out their implications for policymakers, companies and other stakeholders under the CSRD and ESRS, and Section 5.3 explains the study's limitations and suggests directions for future research.

5.1 Interpretation of Findings

The findings of this research show that sustainability data collection is a complex and resource-intensive task, a conclusion that is confirmed by the existing literature.

One of the most pressing challenges identified in the interviews is the difficulty of obtaining reliable data from suppliers. Smaller suppliers in particular often lack the resources or expertise to provide the required information, which limits the accuracy of disclosures along the value chain. This finding is consistent with academic studies that point to the difficulty of obtaining high-quality data on material ESG exposures (Jonsdottir, Sigurjonsson, Johannsdottir, & Wendt, 2022) and confirming OECD (2025b) observations on the structural disadvantages faced by SMEs.

Other than data availability, companies also said that they struggle with the quality and consistency of sustainability data. Interviewees noted that even when suppliers provide figures, the level of detail varies widely, calculation methods differ and harmonisation requires a lot of effort. These challenges are consistent with academic findings that sustainability reports often omit material information, present data in non-comparable formats or provide overly general

disclosures with limited decision-making value (Jonsdottir et al., 2022; Khan, Serafeim, & Yoon, 2015; Amir & Serafeim, 2018). Misalignment among reporting frameworks further increases the complexity and resource intensity, which sometimes leads firms to disclose information of inferior quality (Kotsantonis & Serafeim, 2019). As companies themselves stressed, ensuring consistency across datasets and systems remains one of the most demanding aspects of reporting.

Another aspect that requires more attention is how companies actually use sustainability data internally. Most research focuses on external availability, but less is known about how firms process this information within their own systems, something several interviewees described as a real difficulty.

The results also highlight the regulatory dimension of challenges, particularly those linked to the CSRD and ESRS. Although academic studies on their direct implications remain limited, both interviews and early surveys suggest that the directive will increase reporting requirements and intensify complexity. In this context, the WEA HEC CSRD Business Survey (2025) shows that many companies perceive sustainability reporting as overly complex and lacking clear guidance, with implementation timelines considered too short and smaller firms viewing the directive as disproportionately burdensome. Moreover, 37% of firms see the CSRD as a potential competitive disadvantage compared with non-EU competitors. The interviews confirmed this perception but also suggested ways forward: additional guidelines, sector-specific examples, and digital tools, such as the German Sustainability Code, were seen as useful in translating regulation into practice. Another survey conducted by PwC shows that the main challenges in implementing the CSRD are linked to the availability and quality of data, as well as the complexity of value chains (Figure 6).

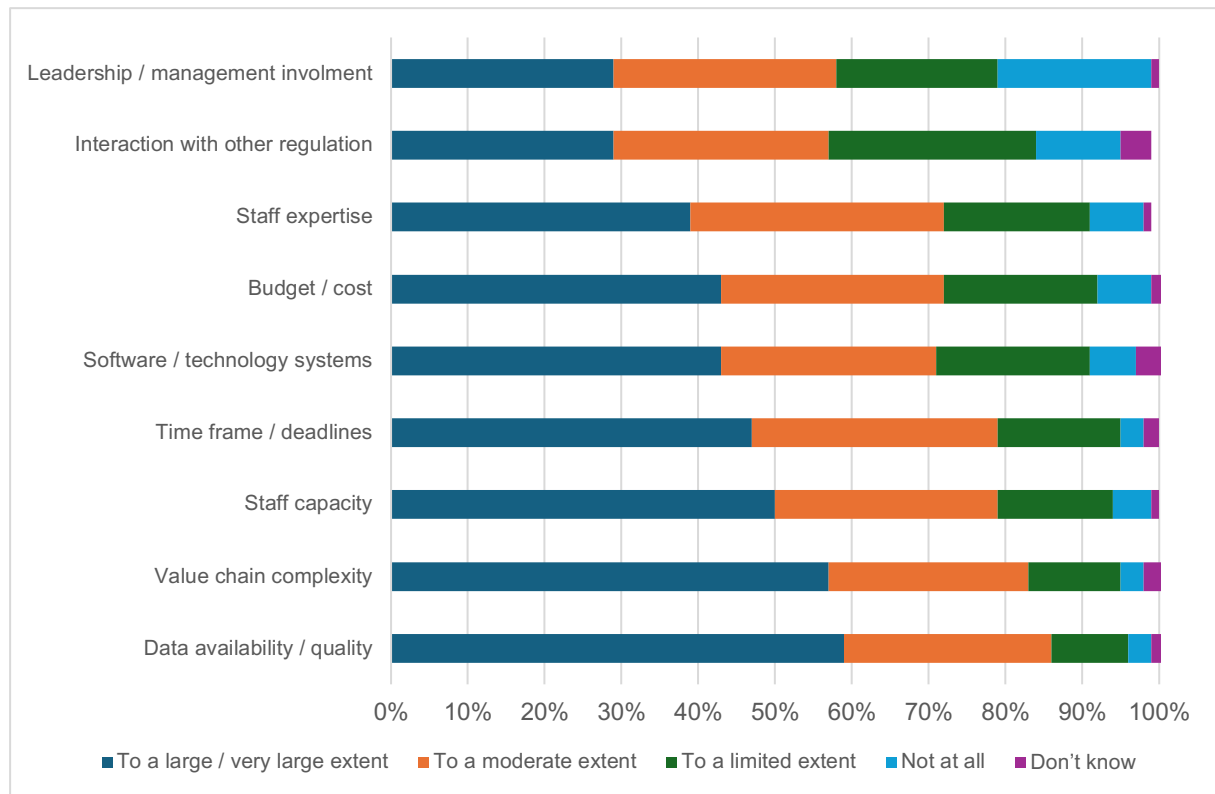


Figure 6 Main challenges to CSRD implementation (based on PwC Global CSRD Survey 2024, retrieved on 04/09/2025, from <https://www.pwc.com/gx/en/issues/esg/global-csrd-survey.html>)

Alongside these challenges, the evidence from the interviews demonstrates that the collection of sustainability data generates significant financial burdens for companies, although the specific configuration of these costs varies across organisational contexts. The most significant cost category across all three cases is personnel. Sustainability reporting requires considerable human resources, often creating entire roles dedicated to the collection and interpretation of data. This was consistently emphasised by the interviewees, who described staff time and wages as the most pressing factor. In addition, companies reported allocating additional resources to manage supplier relationships and continuous communication, which further contributes to internal personnel costs.

Academic studies support these findings and note that the coordination of multiple actors, the resource intensity of verification procedures and the need to ensure accuracy and reliability create significant expenditures (Searcy & Buslovich, 2014). Recent evidence also confirms this.

In particular, the WEA HEC CSRD Business Survey (2025) shows that many firms consider sustainability reporting overly expensive and time-consuming. OECD (2025b) also highlights that smaller firms are disproportionately affected because they lack the scale to spread costs across operations.

A second category of costs concerns external tools and databases. One case firm reported acquiring specialised digital platforms to manage supplier self-disclosures and reporting requirements, while another relied on low-cost solutions such as Excel, thereby reducing technical expenditures but increasing demands on staff capacity. Although the academic literature has paid limited attention to this aspect, the findings of this thesis suggest that the absence of open-access and standardised databases, particularly for country-based CO₂ equivalents, represents a critical challenge. This scarcity forces companies to purchase costly proprietary data or rely on incomplete foreign databases, which leads to a rise in both direct costs, through the acquisition of data, and indirect costs, through the additional time required for recalculation and adaptation.

Academic literature further distinguishes between direct and indirect costs of sustainability reporting (Christensen et al., 2021). Direct costs are linked to preparing, certifying and disseminating reports, including software, assurance and staff time. Indirect costs stem from broader sustainability practices such as adopting energy-efficient equipment, sourcing sustainable materials, paying certification fees or conducting employee training and life-cycle assessments (Rudžionienė & Brazdžius, 2023). The interviews conducted for this thesis primarily highlighted direct costs, especially personnel and data management tools, while indirect costs such as investments in sustainable technologies or certifications were mentioned less frequently. Further indirect costs may also result from activities such as developing sustainability policies, conducting R&D for sustainable technologies, engaging stakeholders or

participating in initiatives like the Global Reporting Initiative or the UN Global Compact (Rudžionienė & Brazdžius, 2023).

The interviews showed that, although collecting sustainability data requires considerable effort and resources, companies still recognise clear benefits. These range from improved reputation and stronger stakeholder trust to internal gains such as greater efficiency and better risk management.

A key benefit concerns reputation and stakeholder perception. All three firms noted that reporting strengthens their credibility and reinforces trust among customers and partners. One company even linked reporting to winning the German Nachhaltigkeitspreis, underlining the public recognition associated with transparent disclosure. This finding is consistent with academic studies, which emphasise that sustainability communication enhances brand image, signals corporate quality and that it can also provide competitive advantage (Rudžionienė & Brazdžius, 2023). In some cases, reporting was described as reinforcing rather than creating trust, confirming research that sustainability reporting consolidates long-term relationships rather than serving as a short-term marketing tool.

The interviews also pointed to internal learning and efficiency gains. They revealed that collecting and analysing data helped companies to identify inefficiencies, set specific goals and also reduce energy consumption, which in turn led to tangible financial savings. For example, one firm explained how reporting supported its photovoltaic energy upgrade and another stressed that reducing energy use directly lowered costs. These insights align with findings in the literature, which highlight that sustainability reporting supports process improvements and promotes waste reduction (Petrescu, Bîlcan, Petrescu, Oncioiu, Türkes, & Căpuşneanu, 2020). Risk management also emerged as an additional benefit. In particular, respondents described that reporting helps to anticipate vulnerabilities and risks, avoid reputational issues and also ensure alignment with corporate values. This resonates with research suggesting that

sustainability reporting can reduce exposure to environmental and social risks and strengthen resilience (Morioka & Carvalho, 2016).

In addition, the interviews showed that sustainability data collection contributes to the development of internal processes and professionalisation. Managers described how reporting fostered more structured decision-making, guided procurement and product development, and provided concrete narratives for marketing and sales. Academic literature similarly stresses that reporting enhances dialogue with stakeholders and demonstrates a company's commitment to broader societal goals (Fernández-Kranz & Santaló, 2010).

Beyond that, firms also reported benefits in access to finance. Banks increasingly request sustainability information, sometimes through detailed questionnaires, and reward transparent reporting with improved credit conditions. Even if not yet a universal practice, interviewees agreed that sustainability disclosures are viewed positively by financial institutions, confirming their growing role as a basis for creditworthiness assessment.

Looking ahead, the interviews pointed to several opportunities that sustainability data collection may provide. Externally, companies recognised that reporting strengthens competitiveness and meets growing expectations for transparency among customers and partners. For firms positioning themselves as sustainability leaders, reporting consolidates brand identity, while for others it may act as a differentiating factor in increasingly crowded markets. Internally, opportunities lie in further efficiency gains, particularly through reduced energy consumption and more sustainable logistics. These perspectives echo the view that sustainability reporting creates long-term value by fostering competitiveness, supporting stakeholder engagement, and facilitating access to capital (Rudžionienė & Brazdžius, 2023).

The results suggest also that companies view the CSRD not only as a burden but also as an opportunity. A preliminary report by PwC indicates that many firms expect the CSRD to improve environmental performance, stakeholder engagement and risk management, similarly

the WEA HEC CSRD Business Survey (2025) reports that most companies believe the CSRD will enhance ESG transparency and comparability for investors and other stakeholders, strengthen corporate sustainability strategy, risk assessment and impact management, and serve as an effective instrument to support Europe’s broader sustainability ambitions (Figure 7). In line with this, the three case companies described how collecting sustainability data improves their public image, builds trust with stakeholders, helps them work more efficiently and manage risks and even supports access to financing. The weight of these benefits varies across firms, still there was a shared view that sustainability reporting will continue to remain relevant.

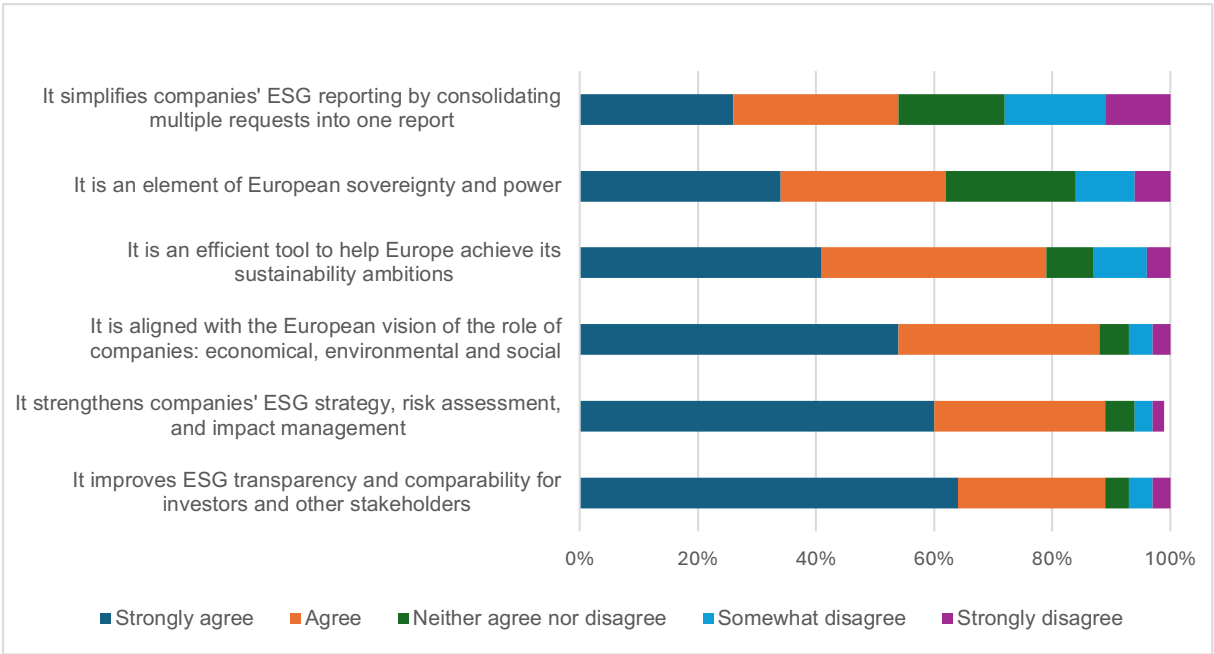


Figure 7 Main strengths of the CSRD (based on WEA HEC CSRD Business Survey, 2025, retrieved on 06/09/2025, from <https://www.weareurope.group/2025-post-omnibus-csrd-business-survey>)

5.2 Implications for Policymakers

The findings of this thesis highlight several important implications for policymakers. Although the new European directives have introduced a harmonisation of reporting obligations, the interviews have revealed that companies face important barriers in collecting sustainability data

and that supporting measures will be essential to translate regulatory ambition into concrete effectiveness.

In the first place, the results confirm the need for clearer and more accessible guidelines. The interviews showed that many companies find the ESRS difficult to work with. The standards are written in a highly technical language that is hard for non-specialists to understand. Smaller firms particularly lack the technical know-how and capabilities to handle such reports on their own and without external support. Simplified interpretations, examples, templates and explanatory platforms, such as the German Sustainability Code (DNK), are seen as extremely helpful. Similar instruments at European level could make the rules easier to apply and reduce the risk of errors or misinterpretation.

Second, the interviews show the necessity of sector-specific guidance. Companies argued that generic indicators often fail to capture the realities of the food industry, especially in matters like biodiversity. As one interviewer observed, current ESRS metrics are more suited to manufacturing contexts, while for example food companies need to know the environmental impact of their raw materials. Policymakers should therefore accelerate the development of industry-specific standards that reflect the actual risks and impacts of different sectors. This would increase the relevance of reporting and also reduce the burden of interpreting ambiguous requirements.

Third, the companies asked for stronger data infrastructures. One of the concerns raised was that the current system, in which each firm requests data individually from suppliers, is inefficient and duplicative. An important suggestion that emerges from the interviews is that sustainability reporting could be made more efficient by leveraging existing regulatory data. For example, farmers in Germany are already obliged to report extensive information on pesticide use, fertiliser application or land management to agricultural authorities. If such data were made accessible in anonymised and aggregated form, for instance, as the average

performance of organic farmers in a given region, companies could integrate it directly into their reporting. As one Firm 1 explained, this would allow firms to “use the data without talking to our suppliers and without them talking to their suppliers”. The creation of shared platforms where suppliers can upload information once, in standardised formats accessible to multiple customers would reduce duplication and lower transaction costs, and at the same time it would alleviate the reporting burden on smaller suppliers.

The findings also pointed out the need to support smaller suppliers. Many of the difficulties companies encounter stem from the limited capacity of these smaller actors who often lack the knowledge and resources to deliver detailed data. From the interviews we see that, without targeted support, reporting obligations could create a heavy burden on the weakest links in the supply chain. Possible solutions mentioned include clearer guidance, simplified templates, training initiatives or even financial incentives to help smaller firms meet reporting demands. Giving smaller suppliers this kind of support would improve both their compliance capacity and the overall reliability of sustainability reporting.

In conclusion, for policymakers the fact that companies are willing to continue reporting even without legal obligations indicates that rules like the CSRD can reinforce and formalise practices that many firms already consider important. Still, without clearer guidance and support for small suppliers, the risk is that reporting remains inefficient and burdensome. Policymakers therefore need to focus not only on setting ambitious rules but also on providing the practical conditions that enable companies to comply effectively. In this way they can ensure that sustainability reporting becomes more meaningful and reliable.

5.3 Limitations and Future Research

Although this study offers valuable insights into the perceived costs and benefits of sustainability data collection in the sustainable food sector, there are several limitations that have to be acknowledged.

First of all, the empirical evidence is based on a small number of interviews with three companies, and thus, the findings cannot be generalised to the entire sector, even if the sustainability food sector is still a relatively small industry. The perspectives captured are particular to the organisational structures of the participating firms and might be different in other contexts or market segments.

Second, the study relies exclusively on self-reported data from company representatives, which may be subject to bias. In fact, interviewees might have emphasised certain aspects of their experience over others, and although academic studies were used for context, future research could incorporate additional perspectives, for instance, those of suppliers or independent assessments of reporting practices.

Third, this thesis only draws on qualitative evidence, without the support of quantitative data. Though the interviews highlight recurring themes, such as high personnel costs, lack of supplier data, reputational benefits and higher costs related to the regulatory frameworks, the magnitude of these factors cannot be measured under the scope of this research. A mixed method approach could help quantify the prevalence of challenges and benefits across larger samples and hence provide stronger evidence for policymakers.

Another limitation relates to the sectoral scope of this research. The analysis has focused on the sustainable food industry, where sustainability is a core element of the business model and therefore highly embedded into strategic and operational decisions. This strong orientation towards sustainability might amplify both the perceived benefits and the challenges of sustainability data collection, making firms more prone to following regulatory and market

requirements. In particular, this limits the generalisability of the findings to more conventional food companies or to sectors where sustainability is less central. Future research could therefore extend the analysis to broader segments of the food industry or to other sectors in order to explore whether the cost–benefit balance differs significantly.

Lastly, another limitation is represented by the temporal scope of the research. The interviews reflect a moment when the CSRD and ESRS were just being introduced, so company perceptions may change as they gain more experience with the new rules. As the CSRD framework evolves, longitudinal studies would be useful to understand which aspects of CSRD compliance lead to lasting benefits and opportunities and which aspects continue to pose difficulties for firms. Also, this temporal limitation is further reinforced by the fact that the CSRD itself is still evolving, with ongoing updates and refinements to the regulatory framework.

Future research could move this discussion forward in several directions. A broader set of case studies would make it possible to capture a wider variety of experiences and compare how different types of firms deal with sustainability data. It would also be important to bring in other voices along the supply chain, especially those of smaller suppliers, whose limited resources often represent a bottleneck in the reporting process. Looking beyond the food industry could help determine whether the challenges and benefits identified here are unique to this sector or whether they recur elsewhere. In methodological terms, combining qualitative insights with quantitative evidence would provide a more balanced understanding of the costs and benefits involved. As a last point, future studies might explore how emerging digital technologies, such as blockchain or AI-based traceability systems, could help in overcoming current challenges of data availability and verification.

6 Conclusion

This thesis aimed to explore the perceived costs, benefits, challenges and opportunities of sustainability data collection in the context of the European Union's evolving regulatory framework. Within the framework of the CSRD and the ESRS, the study explored how companies in the sustainable food sector approach the task of collection and reporting of sustainability data throughout their supply chains. By focusing on three German firms from the sustainable food industry and drawing on semi-structured interviews, the research wanted to provide both a descriptive and interpretive analysis of how regulation is perceived at the firm level.

The results make clear that gathering sustainability data is a demanding task. Firms often struggle to obtain information from their suppliers, and the problem is particularly acute with small-scale suppliers. Because these actors lack the necessary resources and expertise, the data they provide is often incomplete or inconsistent and this decreases the overall quality of reporting. Even when data are available, differences in calculation methods represent a further obstacle. As the interviews revealed, it can happen that companies are forced to estimate numbers or develop their own calculations to compensate for missing or unreliable data.

Internally, companies face the additional challenge of managing data flows through fragmented systems and processes. Although digital tools exist, companies spend substantial amounts of staff time on data collection and interpretation. Personnel costs emerge as the single most significant cost concerning sustainability reporting, with some firms dedicating entire positions exclusively for this task. At the same time, the regulatory environment adds another layer of complexity. Companies generally acknowledge the importance of the CSRD and ESRS in creating a harmonised framework, but they also point out the difficulties of understanding and applying the standards into practice. The highly technical language of the ESRS is perceived as not very accessible to non-experts as it requires much time and experience to interpret.

Moreover, the lack of sector-specific guidance reduces the usefulness of the standards for industries such as food, where biodiversity impacts and supply chain dependencies are central points. As showed by the interviews, generic metrics do not capture the realities of agricultural production, and it is therefore uncertain for companies how to translate regulatory requirements into disclosures that are meaningful.

Despite this, the study also identifies clear benefits and future opportunities associated with sustainability data collection. Companies can gain reputational advantages and improve stakeholder trust through transparent reporting. Positive outcomes frequently mentioned include stronger customer loyalty and enhanced credibility with business partners. Inside the organisation, sustainability data helps firms spot inefficiencies and set clear goals. Interviewers mentioned concrete effects, such as reduced energy use and lower costs, showing that reporting can deliver financial as well as reputational benefits. Its role is also growing in financial relations, since banks are starting to look for sustainability evidence as part of their lending decisions.

All three companies said that they would continue to collect sustainability data even in the absence of legal requirements. From this perspective, the CSRD and the ESRS can be seen less as external impositions and more as an opportunity that help to standardise and harmonise ongoing corporate initiatives.

This thesis contributes to the literature by offering interview-based evidence on how firms in the sustainable food sector perceive the costs and benefits sustainability data collection and it sheds light on the challenges companies face and the future opportunities they foresee in collecting and managing data.

The findings also have practical relevance. For companies, they show that collecting sustainability data requires considerable resources, yet it can also generate tangible value, from efficiency gains to reputational advantages and improved access to finance.

For policymakers, the findings highlight the need to complement regulation with additional guidance, sector-specific standards, accessible databases and support mechanisms for small suppliers. The provision of free and standardised CO₂ equivalent data, for example, would help reduce costs and improve consistency. In the same way, shared digital platforms for data exchange along supply chains could prevent the inefficiency of multiple companies requesting the same information from the same suppliers. By addressing such bottlenecks, reporting can become both more effective and less onerous.

Nevertheless, this thesis has some limitations which constrain the generalisability of the findings. First of all, the empirical evidence is based on a small number of interviews with representatives of sustainable food companies in Germany. Even if this approach provided rich qualitative insights, the findings cannot be generalised to the entire food industry or to other sectors. In particular, the results may reflect the specific orientation of sustainable food firms, for which sustainability is central to the business model. Second, the analysis relied on self-reported perceptions, which may be subject to bias. Third, the temporal scope is limited: the research was conducted during a period of rapid regulatory change, with the CSRD and ESRS still in the process of being finalised. As a consequence, perceptions of costs and benefits may evolve as companies adapt to new requirements and as additional guidance becomes available. Future research could move in several directions. A larger sample, including both conventional food firms and companies from other sectors, would allow broader comparisons. Longitudinal studies could show how views on costs and benefits evolve once the CSRD becomes more established. Quantitative work could also be used alongside interviews to measure financial impacts, for instance on cost structures or access to finance. Another area worth exploring is the role of new technologies such as blockchain in dealing with problems of data access and verification.

In conclusion, this thesis demonstrates that sustainability data collection is both a demanding and a rewarding process. Companies face high costs and organisational challenges, yet they also recognise the importance of data for reputation, efficiency, risk management and stakeholder relations. The results indicate that, although regulatory developments have added layers of complexity to reporting, they also push firms to improve in areas they themselves consider important. For policymakers, this highlights the need to balance ambition with feasibility and to design rules that are capable of producing information that is genuinely useful. For companies, the key message is that sustainability data collection should not be seen solely as a compliance burden, but rather, it represents an investment with the potential to deliver value both inside the organisation and across its wider networks.

Appendix

Interview Questionnaire

Starting point

If CSRD:

- 1.a How did your company approach sustainability data collection before the introduction of the CSRD?
- 2.a Has the amount or type of sustainability data you collect changed since the CSRD has been implemented?
- 3.a Would you say the process has become more complex or easier compared to before?

If not CSRD:

- 1.b How did your company approach sustainability data collection before the announcement of the CSRD?
- 2.b How did your company initially react when the CSRD was announced? Did you make any changes to your process at that time?
- 3.b Now that you're aware the company may not fall under CSRD, are you adapting your process again?

Costs

4. What types of costs do you associate with sustainability data collection and which parts of the process take up the most time or resources?

If CSRD:

- 5.a Have these costs increased since the CSRD?

If not CSRD:

- 5.b If your company had been included under the CSRD, do you think it would have increased the costs?

Challenges

6. What are the main challenges your company faces when collecting sustainability data?

Have you experienced any issues in obtaining reliable data from your suppliers?

If CSRD:

- 7.a Do you find the current regulatory framework clear enough? Are there parts of the ESRS particularly difficult to interpret or apply in practice?

If not CSRD:

- 7.b Although your company may not fall under the CSRD, have you consulted the ESRS? If so, did you find any parts unclear or difficult to interpret?

Benefits

8. Has the process of collecting sustainability data brought any concrete improvements for your company? (E.g., identifying risks or inefficiencies, improving internal processes, strengthening your reputation or stakeholder trust)

Opportunities

9. Looking ahead, do you see sustainability data collection as a potential long-term advantage for your company? (E.g., gaining competitive edge, developing marketing strategies, attracting customers or partners)

Final reflections

If CSRD:

- 10.a Would your company continue collecting sustainability data if it were no longer legally required?

If not CSRD:

- 10.b If your company were included under the CSRD, would you consider it more of a burden or an opportunity?

11. Are there any types of support or changes that would make sustainability reporting easier for your company?
12. Is there anything else you would like to share regarding your experience with sustainability data collection?

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