

Sustainability Reporting in Dairy Cooperatives in Poland: Managers' Opinions*

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Abstract

The motivation for conducting this study was the growing importance of sustainability reporting (ESG) in the business sector, driven by both regulatory pressure from the European Union and stakeholder expectations. In Poland, significant differences are visible in the level of organizational preparedness for implementing ESG principles—large enterprises increasingly integrate non-financial reporting into their business strategies. At the same time, small and medium-sized firms, especially in the cooperative sector, face numerous barriers such as limited resources, a lack of specialist knowledge, or low awareness of potential benefits. The dairy cooperative sector, which plays a key role in the Polish food market, remains relatively understudied in the context of ESG, further reinforcing the need for such an analysis. The literature gap concerns primarily the limited number of studies focusing on small and medium-sized entities in the agri-food sector, particularly those operating as cooperatives. Most existing research focuses on large corporations and capital market entities, whereas cooperatives—despite their significant local and social role—are largely absent from mainstream ESG research. There is a lack of reliable analyses examining ESG awareness among cooperative managers and their readiness to implement non-financial reporting. The study was conducted using a structured interview questionnaire addressed to the management teams of 18 dairy cooperatives in Poland. A total of 56 respondents participated, grouped according to the size of their cooperatives. A pilot study involving five respondents was carried out before the main research to ensure clarity of the questionnaire. The analysis was descriptive and included comparing the responses across small, medium, and large cooperatives. The results reveal significant differences in ESG knowledge levels: awareness among managers in large cooperatives reaches 91%, whereas in small cooperatives it is only 11%. Similar disparities are observed in the preparation of non-financial ESG reports (3% in small cooperatives, 96% in large ones) and in the integration of ESG strategy with overall business strategy. Large cooperatives more frequently use technologies for data collection, report emissions, waste, and water usage, and undertake social initiatives. The study confirms that financial resources, organizational scale, and regulatory pressure are the key factors determining the advancement of ESG practices.

Keywords: sustainable development, ESG, dairy cooperatives

Introduction

The issue of ESG reporting in companies in Poland pertains to the practice of disclosing non-financial data related to environmental (E), social (S), and corporate governance (G) activities. In Poland, the topic of ESG is gaining importance, mainly due to increasing regulatory pressure from the European Union and changing expectations from stakeholders and investors. The ESG reporting requirement primarily applies to large companies; however, an increasing number of small and medium-sized enterprises (SMEs) are considering adopting such reports due to the benefits of improved reputation and gaining a competitive edge.

A key factor driving the development of ESG reporting in Poland is legal regulations, especially the EU Directive 2014/95/EU, known as the Non-Financial Reporting Directive (NFRD), which mandates large companies to report non-financial data. According to this directive, companies must report on issues related to environmental protection, social matters, workforce, human rights, and corporate governance. These regulations have been implemented in Polish law and primarily apply to public companies, banks, and insurance firms. Additionally, the Corporate Sustainability Reporting Directive (CSRD), which came into effect in 2024, has expanded ESG reporting requirements to include more companies, including some SMEs.

Bikefe et. al. (2020) in the article conducted a literature review on CSR in the context of SMEs, indicating that despite limited resources, many small businesses engage in CSR activities as a way to build their reputation and relationships with local communities. The researchers also identify key factors influencing the level of SME engagement in CSR, such as owner values, resource availability, and social pressure. The article's findings suggest that CSR can support SME growth while also positively impacting the social environment, making it a valuable source of insights for business owners and researchers. According to Gyasi et. al. (2023) large companies view ESG reporting not only as a regulatory requirement but also as a tool for building trust and transparency in relations with investors and customers. Financial and energy sector companies, due to their role in the economy and pressure from investors, are more advanced in ESG reporting than non-financial entities. Szczepańczyk., Nowodziński., & Sikorski, A. (2023) note that these companies report in detail on their activities related to climate, CO₂ emissions, workforce diversity, and social engagement.

Although large companies in Poland adopt ESG reporting, SMEs still face many barriers to its implementation. Research by Grabinska et. al. (2024) indicates that these businesses often perceive ESG as a costly and time-consuming practice. A lack of financial resources and expertise in creating ESG reports is a significant obstacle. Additionally, SMEs are not directly covered by the NFRD directive, meaning that only a small percentage of companies in this sector opt for voluntary reporting. On the other hand, awareness of the benefits of sustainable practices is growing. ESG reporting can help SMEs improve relationships with business partners and gain access to more demanding markets that prefer suppliers operating in accordance with ESG principles.

For Polish companies, ESG reporting offers numerous benefits, including: increasing investor trust (ESG reports are becoming key tools in investor relations, especially in the context of the growing popularity of sustainable investments). Giese et. al. (2019) point out that transparency in ESG helps companies better manage financial and market risks, building a competitive advantage—companies that report their ESG activities are perceived as more socially responsible and sustainable, which translates into a competitive edge in foreign markets. ESG also enhances risk management, as it is not only a marketing tool but also a way to identify and manage long-term risks, particularly those related to climate and environmental regulations.

In the coming years, the importance of ESG reporting in Polish companies is expected to grow further, especially with the introduction of new EU regulations, such as the CSRD directive. Bressan (2023) highlights that the introduction of more uniform ESG reporting standards across the European Union will make it easier for Polish companies to comply with new requirements and help them compete better in international markets.

To sum up, ESG reporting in Poland is in a phase of dynamic development, driven primarily by EU regulations and growing expectations from investors and consumers. Large companies in Poland are increasingly adopting sustainable development strategies and publishing ESG reports, while small and medium-sized enterprises continue to face numerous barriers. In the coming years, with the introduction of new regulations and increased awareness of the benefits of ESG reporting, more Polish companies, including SMEs, are expected to adopt such practices.

The study aims to explore the opinions of dairy cooperative managers in Poland regarding sustainable development reporting. Special attention will be paid to the scope of disclosed ESG-related information and the level of knowledge about sustainable development among the respondents.

Literature Review

Sustainability reporting (ESG) has become a key element in modern business operations, especially in the context of increasing stakeholder pressure and regulatory requirements. Companies are increasingly integrating ESG reporting as part of their business strategy, aimed at improving reputation, managing risk, and increasing transparency toward investors and customers (Cheng et al. 2011). The research conducted by these authors confirms that pressure from stakeholders, such as institutional investors, regulators, and customers, plays a significant role in shaping ESG reporting practices. Their findings also indicate that companies actively disclosing ESG-related information achieve better financial results and enjoy greater market trust. A meta-analysis conducted by Friede, Busch, and Bassen (2015), which reviewed over 2,000 empirical studies, demonstrates a strong correlation between ESG activities and corporate financial performance. This research suggests that companies engaged in ESG initiatives can reap significant financial benefits, making ESG reporting a crucial tool for risk management and long-term value creation for stakeholders. Whelan et al. (2021) conducted a comprehensive analysis of the relationship between environmental, social, and governance (ESG) practices and financial performance, aggregating evidence from over 1,000 empirical studies published between 2015 and 2020. Their research highlights that ESG integration generally leads to positive financial outcomes, particularly in long-term performance. They emphasize the growing importance of sustainability for corporate success, driven by increased regulatory demands and stakeholder expectations. The study underscores that firms with strong ESG practices often benefit from improved risk management, enhanced reputation, and better access to capital, leading to more stable financial returns. Busch, Bauer, and Orlitzky (2016) explore the intersection between sustainable development and financial markets. The authors discuss how financial markets have historically integrated, or failed to integrate, sustainable development principles, and they propose new strategies for aligning market practices with sustainability goals. The paper reviews existing literature on sustainable finance and offers insights into how financial institutions can better incorporate environmental, social, and governance (ESG) factors into investment decisions. Busch et al. also examine the role of regulatory frameworks and market incentives in promoting sustainability, highlighting the growing importance of ESG metrics in evaluating corporate performance. Coşkun (2023) examines how environmental, social, and governance (ESG) factors impact corporate financial performance and competitiveness. The study highlights that companies actively integrating ESG principles into their business models tend to achieve better long-term financial performance. Coşkun emphasizes that ESG practices are no longer just ethical obligations but key drivers of competitive advantage. This research delves into how firms that embrace sustainability and responsible governance practices benefit from improved risk management, enhanced investor trust, and stronger brand loyalty, ultimately leading to superior market positioning and financial success. In the study conducted by de Souza Barbosa et al. (2023), the integration of ESG criteria and its impact on corporate sustainability performance is discussed. The authors analyze how companies that adopt ESG criteria can improve their financial performance, enhance their reputation, and reduce operational risk. The research also explores how ESG influences the creation of long-term value for stakeholders. The findings suggest that effectively incorporating ESG into business strategies not only supports sustainable development but also leads to better risk management and strengthens the company's financial outcomes.

The growing awareness of climate risk and its impact on corporate financial performance has caught the attention of institutional investors. Krueger, Sautner, and Starks (2020) highlight that managing climate-related risks has become a key factor in attracting capital. Companies that effectively manage these risks are more likely to achieve long-term profits, increasing their attractiveness to investors. Thus, implementing ESG strategies that address climate challenges is essential in managing financial risk. Research on the influence of institutional investors on corporate governance by Dyck, Lins, Roth, and Wagner (2019) shows that institutional investors play a crucial role in promoting ESG actions in firms. Many companies, under the pressure of these investors, have begun to prioritize transparency and social responsibility. Cheng, Ioannou and Serafeim (2011) also stress that national institutions and legal frameworks significantly influence ESG reporting practices. Regulations and institutional norms can increase corporate engagement in ESG activities, especially in an international context. Aguilera et al. (2024) examined how cultural differences impact ESG reporting, suggesting that despite global trends, local cultural contexts can influence how companies approach ESG reporting, shaping investor and stakeholder expectations. Kölbel, Heeb, Paetzold, and Busch (2020) argue that sustainable investments also affect corporate decisions and promote social change. Investors focused on ESG indicators can exert significant influence on corporate operations, driving greater transparency and responsibility. Rezaee (2016) draws similar conclusions, suggesting that sustainable business practices are key to building long-term corporate value. Companies that

engage in ESG reporting are better positioned to compete in international markets and are more prepared for changing regulations and stakeholder expectations. Christensen, Hail, and Leuz (2021) conducted a comprehensive analysis of international ESG reporting standards, emphasizing the need for regulatory harmonization to improve data comparability across companies from different countries. They argue that the lack of uniform guidelines hinders investors' ability to assess ESG-related risks, affecting their investment decisions. Moreover, research by Giese, Lee, Melas, Nagy, and Nishikawa (2019) demonstrates that ESG not only influences financial performance but also affects firm valuation and risk management. Companies that successfully integrate sustainable development principles can reduce operational and financial risks, positively impacting their market value in the long run. In a study by Sirimon Treepongkaruna and Muttanachai Suttipun (2024), the impact of ESG reporting on firm profitability in Thailand was analyzed, showing a significant positive influence of ESG on profitability, measured by return on assets (ROA) and return on equity (ROE). Another study by Ferri and Tron (2023) focuses on how ESG disclosures impact companies' performance during an initial public offering (IPO). Their findings suggest that companies disclosing sustainability-related data achieve better financial results during their public offerings due to increased investor trust.

Long-term benefits derived from ESG reporting are supported by studies that demonstrate a positive correlation between ESG activities and corporate financial performance. Delova-Jolevska et al. (2024) found that companies actively managing ESG risks perform better in international markets, especially in regions with unstable economic conditions like the Western Balkans. The introduction of sustainable practices helps firms better manage risk and achieve long-term financial stability. Similarly, studies on the long-term effects of ESG on corporate financial performance reveal the significance of the business lifecycle. The publication by Hadiwibowo et al. (2024) provides a comprehensive overview of existing research on the relationship between corporate social responsibility (CSR) and company performance. The authors explore how CSR initiatives impact financial outcomes, focusing on both direct and indirect effects. The literature review highlights that companies engaging in CSR often experience improvements in brand image, customer loyalty, and operational efficiency, which contribute to long-term financial benefits. Furthermore, the study emphasizes the importance of aligning CSR strategies with corporate goals to enhance the firm's overall performance. Larcker, Tayan, and Watts (2022) in their study critically analyze and debunk several myths surrounding ESG (Environmental, Social, and Governance) investing. One of the key misconceptions they challenge is the overestimation of the direct impact of ESG practices on financial performance. While some studies highlight the potential benefits of ESG, the authors argue that the actual influence of ESG on a firm's financial outcomes is more nuanced and multifaceted. They suggest that while ESG can improve certain aspects of company operations, its overall effects depend on the context and how these practices are implemented. The article highlights the need for a more sophisticated understanding of how ESG metrics interact with business performance, moving beyond simplistic assumptions that ESG always leads to positive financial results.

In research by Arduino, Buchetti, and Harasheh (2024) the growing importance of transparency in family-owned businesses regarding ESG was emphasized. The study highlights the positive impact of institutional investors on raising the level of ESG disclosures. Additionally, research by Chen, Liu, and Song (2023) shows that improving ESG performance leads to better financial results, particularly during crises like the COVID-19 pandemic. A study by Al Amosh, Khatib, Alkurdi, and Bazhair (2024) also pointed to the relationship between capital structure decisions and ESG performance in Jordanian firms, demonstrating that debt financing positively influences ESG outcomes by enhancing risk management and reducing agency costs.

Sustainable supply chain management is another important aspect of modern business operations. Mc Loughlin (2023) argues that firms integrating ESG principles into their supply chains not only improve operational efficiency but also enhance their competitiveness in international markets. Transparency in ESG reporting within supply chain management allows better monitoring of the environmental and social impacts of business activities, which is an important factor in the purchasing decisions of clients and business partners. In the article by Jámbor, & Zanócz (2023), the focus is on labor rights and their enforcement within global value chains. The Authors highlight the challenges that international companies face in ensuring that labor standards are upheld across various regions, where national and international policies can lead to varying degrees of enforcement. Griffin and Jaffe (2022) examine the challenges of mandating climate risk disclosures for companies. They argue that while such disclosures are critical for assessing risks related to climate change, there is a need for standardized methods that help companies report these risks, especially in sectors like energy.

Innovation is another area where ESG plays a critical role. Chen et al. (2024) found that companies effectively implementing ESG are more innovative, leading to long-term financial benefits and increased market competitiveness. The authors analyze how various ESG factors can impact companies' financial performance,

focusing on sustainable management and corporate ethics as elements that may generate long-term value. The study, based on a large data sample, uses quantitative methods to establish correlations between ESG performance and various financial indicators, such as profitability and financial stability. The results suggest that environmental responsibility and social governance can contribute to improved financial outcomes, particularly in companies with high ESG standards. The article provides useful insights for both managers and investors, showing that investing in ESG initiatives not only meets growing social expectations but can also bring financial benefits.. Amoako (2024) indicates that ESG reporting fosters corporate innovation, which in turn positively affects market positioning. The authors suggest that companies that effectively integrate ESG into their operations are more likely to adopt new technologies and solutions, resulting in improved operational efficiency and profit growth. Research by Rashid, Zobair, and Sobhani (2023) illustrates how ESG performance affects corporate innovation and sustainability outcomes. Studies conducted in Bangladesh reveal that higher ESG performance leads to increased corporate innovation, which translates into better sustainability outcomes, particularly in the manufacturing sector. Zhang and Liu (2023) analyzed the impact of ESG performance on green innovations in Chinese firms listed on the A-shares market. Their findings suggest that higher ESG scores significantly enhance ecological innovation, primarily by alleviating financial constraints and increasing human capital. Cifrino, McDermott, and Emery (2023) discuss the growing importance of international ESG disclosure standards. The authors point out that frameworks like those developed by the International Sustainability Standards Board (ISSB) are becoming essential for firms as they adapt their reporting practices to meet the expectations of global investors and stakeholders. Tettamanzi, Venturini, and Murgolo (2022) critically analyze the integration of ESG into financial accounting, highlighting the challenges businesses face in ensuring that ESG principles are effectively incorporated into corporate reporting. They stress that ESG reporting is crucial for corporate accountability but requires structured accounting methods.

Ownership structure also influences corporate engagement in ESG reporting. Pathak, Tripathy, and Panda (2024) examined the impact of CSR (Corporate Social Responsibility) regulations in India, finding that different types of company ownership (state-owned, private, international) approach sustainable development initiatives differently. In private firms, ESG activities are often viewed as a key element of business strategy, while in state-owned firms, implementing such activities is frequently driven by regulatory requirements. However, companies continue to face challenges in implementing ESG strategies. Bikefe et.al (2020) note that small and medium-sized enterprises (SMEs) face difficulties fully adopting ESG reporting due to limited financial and human resources. Despite these challenges, companies that adopt sustainable practices can derive long-term benefits, such as improved reputation and increased customer loyalty. Additionally, a study on ESG and financial reporting highlighted a methodology that reduces biases in ESG assessment, allowing for more consistent and practical reporting (Cakir et al., 2023). This article points to the need for better alignment between ESG reporting and market requirements.

Sustainability reporting (ESG) has become increasingly central to modern corporate strategies, particularly in the face of growing stakeholder pressure and stricter regulatory requirements. MSCI's 2023 report on "ESG & Climate Trends to Watch" highlights that advancements in technology, like blockchain, alongside the growing importance of carbon emission regulations, are changing how businesses and investors approach ESG (MSCI, 2023). The report emphasizes that adopting sustainable practices, such as reducing carbon footprints and managing climate risk, is becoming an essential part of corporate risk management strategies. This aligns with the analysis, which found that companies are increasingly aligning ESG data with financial data to improve accuracy and transparency. This move is aimed at meeting both regulatory demands and investor expectations for comprehensive, consistent reports (IR Magazine, 2023). Villiers and Maroun (2017) provide a comprehensive exploration of how sustainability accounting and integrated reporting have evolved in the context of corporate governance. The book delves into the integration of sustainability practices within financial reporting and emphasizes the importance of transparent, holistic reporting that includes environmental, social, and governance (ESG) factors. The editors highlight the growing need for businesses to adopt integrated reporting frameworks to improve accountability and provide a clearer picture of their long-term sustainability performance. The work brings together theoretical and practical insights from leading scholars and professionals, making it a valuable resource for understanding how sustainability can be embedded into corporate reporting structures.

Additionally, research by Yu, Gu, and Dai (2023) explored how Industry 4.0 technologies could enhance ESG reporting processes, especially in high-impact industries such as energy. These technologies are helping firms monitor their environmental impacts more effectively, thereby increasing trust among investors and other stakeholders. In the same vein, Wen et al. (2023) identified 182 ESG indicators crucial for future research and analytical practices in the context of ESG investments, stressing the need for standardized reporting practices globally.

Nielsen (2023) underscores the importance of the double materiality approach in ESG reporting, which has become a key aspect of new European sustainability reporting standards (ESRS) and ISSB guidelines (IFRS S1 and S2). These standards require firms to report both direct and indirect emissions, making it easier for stakeholders to assess ESG-related risks.

In another study, Chong and Loh (2023) examined the impact of ESG transparency on the valuation of companies in the palm oil sector. They found that increased transparency, especially in environmental protection, improves a company's access to financing, though it can temporarily reduce market valuation, particularly for larger firms. Su et al. (2023) discuss how systematic ESG reporting, based on GRI standards, helps companies prepare for future climate crises by improving long-term resilience and business value. Moreover, Dyck, Lins, Roth, and Wagner (2019) point out the pivotal role institutional investors play in promoting ESG practices in businesses. Companies that adopt sustainable development principles and regularly report their ESG performance become more attractive to these investors, leading to increased market value.

Studies from emerging markets, such as South Africa, reveal that high ESG ratings lower financial risk and reduce capital costs for firms. Companies with strong ESG scores are perceived as more sustainable, attracting better credit terms and improved financial performance (Chininga et al., 2024).

The conclusions drawn from research on ESG reporting indicate the growing importance of sustainable development in corporate business strategies. Despite challenges such as implementation costs and resource limitations, the benefits of ESG reporting are undeniable. These benefits include enhanced reputation, increased innovation, and improved financial performance. As stakeholder pressure continues to rise, companies that actively integrate sustainable development strategies are likely to gain a lasting competitive advantage.

Studies clearly demonstrate that firms engaging in sustainable development achieve better financial results, are more innovative, and enjoy greater trust from stakeholders. Companies that effectively integrate ESG into their business activities can reap numerous benefits, including the reduction of operational risk, improved reputation, and the attraction of institutional investment capital. This aligns with research that shows companies with higher ESG ratings tend to have more stable financial outcomes and are better equipped to face future regulatory and market challenges (Friede et al., 2015; Dyck et al., 2019; Aguilera et al., 2024).

These findings suggest that ESG reporting is not just a regulatory requirement but a strategic tool that fosters innovation, sustainability, and long-term financial growth, making it a crucial aspect of modern corporate governance. Dmuchowski et al. (2023) discuss global trends in the implementation of ESG and sustainable investments, with a particular focus on Poland. The authors point out that ESG strategies are increasingly becoming a standard in global financial markets, especially after economic crises and in the context of growing environmental awareness. The article emphasizes that, although ESG funds tend to perform better during crises, the adoption of these principles in Poland has been delayed, primarily due to educational and informational barriers. Their research suggests that Poland has significant potential for green investments, but overcoming these challenges is essential for successfully integrating ESG into the financial sector.

Based on the literature, the following research questions were formulated:

- To what extent does the level of managers' knowledge about ESG differ across cooperatives of various sizes?
- Do large cooperatives prepare formal ESG reports more frequently than small and medium-sized cooperatives?
- How strongly is the ESG strategy integrated with the overall business strategy in cooperatives of different sizes?
- How does the scope of ESG disclosures vary between large cooperatives and those operating on a smaller scale?

Materials and Methods

The aim of the study was to determine the level of ESG awareness and the extent to which sustainability reporting practices have been implemented in dairy cooperatives in Poland, with particular emphasis on differences resulting from organizational size. The starting point was the observation of significant disparities among entities in terms of knowledge, resources, and readiness to adopt ESG principles. The study was based on the assumption

that regulatory pressure from the European Union and stakeholder expectations increase the importance of non-financial reporting also within the cooperative sector.

Based on the literature review and an analysis of existing regulations, the following research hypotheses were formulated:

H1: *The level of managers' knowledge about ESG increases with the size of the cooperative.*

H2: *Large cooperatives prepare formal ESG reports more frequently than small and medium-sized cooperatives.*

H3: *The integration of ESG strategy with the overall business strategy is stronger in large cooperatives.*

H4: *The scope of disclosed ESG information is broader in large entities than in those operating on a smaller scale.*

The study was conducted using a structured interview questionnaire addressed to the management of eighteen dairy cooperatives in Poland. The sample consisted of a total of 56 respondents, including 11 representatives of small cooperatives, 17 of medium-sized ones, and 28 of large cooperatives. The criterion for classifying the cooperatives was the value of their equity, recognized as an adequate measure of organizational size and capacity. Before the main study, a pilot test was conducted with five managers to assess the clarity and comprehensibility of the questions; the pilot results were not included in the final analysis.

The questionnaire consisted of three thematic sections. The first included questions related to ESG awareness and the existence of formal sustainability principles and priorities. The second section concerned the scope of reported ESG information, including greenhouse gas emissions, water consumption, waste management, sources of raw materials, occupational health and safety procedures, social practices, and supplier requirements. The third part assessed the degree of institutionalization of ESG processes, including the integration of ESG with business strategy, the transparency of communication with stakeholders, the use of digital tools for data collection, and external verification of ESG reports. Most questions were dichotomous (yes/no), which enabled a clear assessment of whether a given practice was present in each cooperative.

The analysis of the results was descriptive and comparative. Differences between small, medium-sized, and large cooperatives were taken into account, allowing verification of the relationships predicted in the research hypotheses. The chosen method enabled the collection of information directly from individuals responsible for managing the cooperatives, which increased the reliability of the data. Moreover, the adopted research approach made it possible to analyze entities that are rarely the focus of studies on ESG reporting, despite their significant role in the functioning of the national agri-food sector. The study was conducted from December 2023 to March 2024.

Results

Table 1 presents the results of a study on the opinions of management from 18 dairy cooperatives regarding ESG reporting, based on the size of the entity (equity value). Only affirmative responses were included in the description of the results. It is important to note that the authors define "reporting" as formalized ESG reports, which does not imply that the studied companies have not implemented procedures related to food safety, occupational health and safety, etc.

In small cooperatives, only 11% of managers reported knowledge about ESG, which may reflect low awareness or limited resources allocated to education in this area. In medium-sized dairy cooperatives, the percentage of positive responses rises to 28%, while in large cooperatives, it reaches 91%. This high percentage of positive responses in large cooperatives could be due to the larger scale of operations, more stringent regulations, and growing expectations from stakeholders (suppliers, customers, etc.). Similar trends are observed regarding the existence of formal ESG goals and priorities. In small cooperatives, only 9% of management declared having such goals, which may indicate a lack of a systematic approach to integrating ESG within these entities. In medium-sized cooperatives, this percentage increases to 12%, while in large cooperatives, it reaches 87%, likely due to having greater resources and the need to comply with complex regulatory requirements and stakeholder expectations.

When considering the scope of reporting on selected ESG categories, the differences between small and large cooperatives become even more pronounced. Only 17% of small cooperatives report on selected ESG elements, possibly due to limited resources and less external pressure on non-financial reporting; 23% of medium-sized

cooperatives report, while 80% of large cooperatives do so. The high level of reporting in large cooperatives may be related to their greater commitment to ESG issues and higher expectations from investors and other stakeholders, as well as legal requirements. In terms of reporting on selected ESG categories, measuring greenhouse gas emissions in small, medium, and large cooperatives is a category subject to strict control (97%, 98%, and 99% of responses, respectively). This situation arises because CO2 emission reporting is a standard that cooperatives, regardless of size, must adhere to due to global regulations and industry requirements.

In small cooperatives, only 18% of management report on water usage efficiency in their operations, while in large cooperatives, the percentage of responses is 90%. This significant disparity may result from greater emphasis on efficient water resource management in larger cooperatives, which is an element of cost optimization. Regarding waste generated by production processes, only 27% of small cooperatives report their existence, whereas 91% of large cooperatives provide such reports. This difference may indicate better waste management systems and greater investment in recycling in larger dairy cooperatives. Reporting on sustainably sourced raw materials is utilized by 13% of management in small cooperatives, 49% in medium-sized, and 83% in large cooperatives, which may reflect increasing awareness and capabilities of larger cooperatives regarding sustainable sourcing of raw materials.

Regarding standards and procedures for food quality and safety, 64% of managers in small cooperatives report on this issue, 79% in medium-sized, and all respondents from large dairy cooperatives. The high level of reporting in large cooperatives suggests that they are more committed to adhering to food quality and safety standards. In terms of labor practices, only 21% of managers in small cooperatives report on this issue, while 72% in large cooperatives do, indicating greater attention to policies related to worker safety and equality in larger enterprises surveyed.

Table 1. Management Opinions of Dairy Cooperatives on ESG Reporting Based on Equity Level – Size of the Cooperative (Affirmative Responses in %).

NO.	QUESTION	SMALL* (N=11)	MEDIUM (N=17)	LARGE (N=28)
1	I am familiar with ESG reporting	11	28	91
2	Formal goals and priorities for ESG reporting are established	9	12	87
3	Management reports on selected ESG categories, including:	17	23	80
A	Measurement of greenhouse gas (GHG) emissions across the value chain, including direct and indirect emissions related to the production and distribution of food products.	97	98	99
B	Amount of water used in the production process, including water use efficiency and wastewater management.	18	65	90
C	Amount of waste generated by production processes and the percentage of waste recycled or reused.	27	33	91
D	Proportion of sustainably sourced raw materials, such as certified sources of raw materials.	13	49	83
E	Standards and procedures regarding food quality and safety, including compliance with industry norms and regulations.	64	79	100
F	Practices related to working conditions, including occupational safety and health, and policies to prevent discrimination and ensure equal opportunities.	21	39	72
G	Social initiatives, such as investments in local communities, public health actions, or social support programs.	24	44	87
H	Sustainability criteria applied to suppliers, including environmental, ethical, and labor requirements.	39	72	100
I	Strategies and actions taken to manage climate change-related risks and their impact on company operations.	10	29	89
J	Educational programs and campaigns aimed at raising environmental awareness among employees and customers.	21	62	94
4	Detailed non-financial ESG reports are prepared	3	42	96
5	The company's ESG strategy is integrated with the overall business strategy	5	21	75

6	The organization ensures transparency in ESG reporting and communicates results to stakeholders	5	33	78
7	Technologies and tools are used to collect and analyze ESG data	5	35	70
8	ESG reports are verified by third parties or external auditors	5	33	91

* number of respondents in cooperatives by size.

Source: own study.

According to 24% of management in small cooperatives, 44% in medium-sized, and 87% in large cooperatives, community initiatives are reported, indicating greater engagement of larger cooperatives in community and public health activities. This variation may also be because large entities have relatively greater financial resources for social activities. Reporting on sustainability criteria concerning suppliers of raw materials and other materials is declared by 39% of management in small cooperatives, 72% in medium-sized, and all in large ones, which may indicate increasing pressure to ensure sustainability in the supply chain across all surveyed cooperatives.

In terms of managing climate change-related risks, 10% of management in small cooperatives report on this issue, 29% in medium-sized, and 89% in large dairy cooperatives. The high level of reporting in large cooperatives may reflect their greater awareness and preparedness for climate change. Educational programs and campaigns aimed at raising environmental awareness are reported by 21% of management in small cooperatives, 62% in medium-sized, and 94% in large ones, suggesting that larger cooperatives have more resources and willingness to engage in environmental education.

Regarding the preparation of detailed non-financial ESG reports, only 3% of management in small cooperatives prepare them, while in large cooperatives, the percentage of responses is 96%. This indicates a growing need to meet regulatory requirements and stakeholder expectations in larger dairy cooperatives. The integration of ESG strategy with the overall business strategy is practiced by 5% of management in small cooperatives, 21% in medium-sized, and 75% in large ones. This may reflect the increasing importance of an integrated ESG strategy with the growth of equity (size) in dairy cooperatives.

Transparency in ESG reporting and communicating reports to stakeholders is ensured by only 5% of management in small cooperatives, 33% in medium-sized, and 78% in large ones. The use of technologies and tools for collecting and analyzing ESG data is limited in small cooperatives (5% of management reports using such tools), moderate in medium-sized cooperatives (35%), and relatively high in large cooperatives (70%). This trend suggests that larger cooperatives invest more in information technologies supporting ESG data management. Verification of ESG reports by third parties (e.g., external auditors) is conducted by 5% of management in small cooperatives, 33% in medium-sized, and 91% in large ones, which may indicate the growing importance of external audits in ensuring the reliability of ESG reports in large dairy cooperatives.

Discussion

The research results indicate significant differences in ESG awareness and formal ESG goals depending on the size of the dairy cooperatives. In large cooperatives, 91% of management report awareness of ESG issues, while in small cooperatives, only 11% do. Similar differences are observed in the establishment of formal ESG goals. These findings align with the research by Chen et al. (2023) and Eccles and Klimenko (2019), which suggest that larger organizations are more likely to integrate ESG into their strategies and formalize sustainability-related goals. Larger cooperatives often have more resources and stakeholder pressure, leading to increased ESG awareness and goal formalization.

The results show high levels of reporting on greenhouse gas (GHG) emissions among all cooperatives, consistent with global trends in emission reporting and efforts to mitigate climate change impact (Busch, Bauer, & Orlitzky, 2016). In the categories of water, waste, and sustainable raw materials reporting, the differences between small and large cooperatives are pronounced, with larger cooperatives reporting more. Research by De Villiers & Maroun (2017) also indicates that larger firms often have more advanced environmental management systems and greater resources for reporting these categories.

The research shows low levels of detailed non-financial reporting in small cooperatives, contrasting with high levels in large cooperatives. This phenomenon may be linked to greater regulatory requirements and stakeholder expectations for large organizations, which compel them to provide more detailed reporting (Giese et al., 2019). Additionally, the integration of ESG strategy with overall business strategy is significantly higher in large

cooperatives (75%) compared to small ones (5%), consistent with Chong & Loh (2023) findings that larger companies are more inclined to integrate ESG with core business strategies to enhance long-term value and risk management.

The results indicate relatively low use of ESG data collection technologies and tools in small cooperatives, which increases in large cooperatives. This aligns with research by Cheng, Ioannou, and Serafeim (2011), suggesting that larger organizations are more likely to invest in technologies supporting ESG reporting to better manage data and meet regulatory requirements.

In summary, the research confirms existing theories and literature on differences in ESG reporting based on organizational size, highlighting greater formalization, transparency, and investment in ESG technologies in larger entities. Management perceptions of ESG are evolving towards greater acceptance and understanding of its benefits. Managers recognize ESG's potential to improve financial performance, manage risk, and build positive stakeholder relationships. However, many companies, especially smaller ones, face barriers to implementation, primarily due to costs and resource constraints.

Conclusions

The analysis aimed to determine the opinions of dairy cooperative managers regarding ESG reporting. Based on the research findings, the following general conclusions can be drawn:

1. Larger cooperatives have more substantial equity, which enables them to invest in advanced ESG reporting systems, analytical technologies, and employ specialists. Smaller cooperatives often lack the necessary resources for such investments, which may limit their ability to implement comprehensive ESG systems.
2. Larger cooperatives frequently operate with more complex structures that require advanced ESG management. Due to their larger scale, they can more effectively implement and monitor ESG policies and report them in greater detail.
3. Larger cooperatives may be more susceptible to pressure from investors and stakeholders, which drives them to engage in more intensive ESG reporting. In contrast, smaller cooperatives may have less stringent obligations to adhere to rigorous ESG standards, especially if their operations do not attract significant investments.
4. As cooperatives grow, they may gain more experience and awareness regarding the importance of ESG. Larger cooperatives, with access to more advanced knowledge and best practices, may be more inclined towards advanced reporting in this area. They also have greater investment capacity for employee training and development of ESG reporting systems, whereas smaller cooperatives may lack such resources.
5. Larger cooperatives may view ESG reporting as a key component of their long-term strategy, leading to more advanced practices in this field. Smaller cooperatives might focus on day-to-day operations and short-term goals, potentially limiting their engagement in ESG reporting. Additionally, small entities are not mandated to report non-financial information, whereas larger entities either are or will soon be required to do so in the near future.

A limitation of the study was the relatively small group of respondents. Future analyses could also include a larger number of companies and consider other industries, such as conducting detailed ESG analyses across the entire food industry.

The results of the conducted study contribute to the literature on cooperatives and the agri-food sector by filling the gaps identified in previous research. Existing studies have focused primarily on ESG analyses in large corporations, financial institutions, and publicly listed companies (e.g., Friede et al., 2015; Giese et al., 2019; Whelan et al., 2021). Cooperatives, despite their significant share in the food processing market, have been examined only sporadically or mainly in the context of their social role, rather than their readiness to engage in ESG reporting. The findings of this study help bridge this gap by providing empirical evidence on managerial knowledge, organizational capabilities, and reporting practices in one of the most important segments of the Polish agri-food sector. The research reveals strong differentiation between cooperatives in terms of ESG awareness and the maturity of reporting practices, which expands earlier analyses on the limitations faced by small and medium-sized enterprises in implementing sustainability practices (Bikefe et al., 2020; Grabinska et al., 2024). These results indicate that the barriers described in the literature—such as limited resources, low levels of knowledge, and a lack of dedicated organizational structures—are particularly pronounced in smaller dairy cooperatives.

Furthermore, the study confirms and extends the findings of authors who have identified organizational size as a key predictor of ESG process formalization (Chen et al., 2023; Szczepańczyk et al., 2023). In the cooperative

sector, this relationship proved to be particularly strong: large cooperatives not only demonstrate greater ESG awareness but also prepare non-financial reports far more frequently, integrate ESG with business strategy, and use digital tools to support data management. This is the first study in Poland to empirically document such a strong correlation between the size of a cooperative and the maturity of its ESG practices.

The analysis also introduces a new perspective to the literature on the agri-food sector by identifying which ESG areas are reported most and least frequently. The findings show that, despite the high level of control in areas such as emissions and food safety, many cooperatives—particularly smaller ones—do not report on issues such as social initiatives, ESG criteria for suppliers, or climate-related risk management. Thus, the study offers practical evidence on which segments of the agri-food value chain may require institutional or regulatory support.

The results further develop the literature on the role of managerial knowledge in implementing sustainability practices. Previous studies emphasized managerial competencies as a critical factor supporting ESG adoption (Cheng et al., 2011; Dyck et al., 2019), yet empirical evidence from the cooperative sector was lacking. This study shows that in large cooperatives, where managerial knowledge about ESG is highest (91%), the degree of formalization of ESG practices is also the greatest. These findings reinforce arguments about the essential role of managerial education and confirm that the lack of ESG competencies is one of the main barriers in the SME sector.

Finally, the study brings new value to the literature by examining a sector that will soon be subject to increasing regulatory requirements under CSRD and ESRS. Dairy cooperatives, which have not previously been obliged to report non-financial information, will be required to adapt their management systems, and this study provides a reference point for future analyses of their readiness for regulatory changes.

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