

# Can Sustainability Reporting Make A Difference?: A Qualitative Analysis on Sustainability Reports of BIST Listed Agri-Food Companies in Turkey

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## ABSTRACT

Agri-business is a huge industry, including all operations from farm-level production to storage, manufacture, and distribution of agricultural commodities. This fact, together with worsening social and environmental conditions and pandemic crises, has added to a change in the perception of agriculture in economic construction. The following decades will most probably witness a resurgence of agriculture-based development recipes fed by social, environmental, and governance dimensions of sustainability. This article searches for the sustainability reports of agri-business firms listed in BIST in Turkey. A sampling includes 11 out of 64 listed agri-business firms having recent sustainability reports, which are examined by qualitative data analysis techniques with MAXQDA software. The first argument our findings support is that the agri-food sector is lagging in sustainability reporting compared to other sectors. Second, companies are more ready to comply with issues that are legally regulated. Third, environmental problems are more addressed than social and economic sustainability standards. This study also shows the relative unimportance of topics such as child labor, pesticide use, supply chain traceability, women entrepreneurship, and geographical indication, which can have positive impacts on the Turkish agricultural space if big companies integrate these topics more into their sustainability reporting processes. This article contributes to the literature on sustainability in general and reporting in the agri-food sector in particular.

**Keywords:** Sustainability reports, Agri-business, Turkey, BIST, Qualitative Analysis, MAXQDA.

**JEL Classification Codes:** Q13, M14, L21

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## INTRODUCTION

Sustainability has been triggering heated public and scholarly discussions in recent times. Despite the earlier efforts to define the term, the interest in the topic entered a new phase in 2015, when the United Nations announced Sustainable Development Goals. After that moment, all related parties including public institutions, non-governmental organizations, international institutions, governments, companies, producers, and consumers began to direct more focus attention to sustainability. One of the outcomes of this trend is that companies begin to publish non-financial reports, called sustainability reports, to play a responsible business role, inform stakeholders, and show their consciousness. Although reporting is still an ongoing and optional process, an increasing number of companies allocate sources for this aim.

This article investigates the sustainability reports of agriculture-related firms listed in BIST in Turkey.

Within a broader question about whether reporting can make a difference, we present the current situation of sustainability in big Turkish agri-business firms. BIST company lists are searched for agriculture-related industries, and it is seen that there are 11 out of 64 firms publishing sustainability reports. The most recent reports of these companies are studied through thematic and frequency analysis. Coding and analysis are done by MAXQDA software. GRI 13 agricultural industry standards are used to understand economic, social, and environmental aspects of sustainability from the perspective of these firms. Also, we determine certain codes selected from recent literature about agricultural transformation to see their relevance in reports.

Below, first, we will discuss the emergence of sustainability as a concept. This part presents changes in its meaning and policy implications. Then, we track the sustainability reporting from its emergence to standardization efforts. A short discussion of different standards and the absence of any legal requirement

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for companies to publish reports make sustainability reporting still an ongoing yet potentially growing area. The third part is about sustainability in agri-business. In recent years, food safety and food security concerns, greater public interest in the ecological, social, and health risks, and alarming climate changes heat the discussion around agribusiness and sustainability. This part presents the current debate by specifying economic, social, and environmental barriers to ensure sustainability in agribusiness. The fourth part investigates sustainability reporting in agribusiness. It reviews the literature about different agriculture-related companies from different countries, including Turkey, and shows the slowness of the agricultural industry in reporting efforts. It is also seen that environmental issues place more emphasis on reporting efforts than social and economic items. Having this background, the fifth part presents the original research of this article by explaining sampling, data analysis, and findings. In conclusion, we gather our results and contribution.

### DEFINING SUSTAINABILITY

Sustainability has been defined from different perspectives since its emergence. As the term earlier emerged in the 1980s, it was common to think within limits perspective addressing the harms given by consumption society to the world by pushing its limits. Over time, the focus has converged from limits to a more human welfare perspective underlining the quality of life and maintenance of well-being (Waseem & Kota, 2017). Reflecting this gradual change, sustainable development was first defined in the Brundtland Report, published by the United Nations (1987), as *“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*

Following the UN definition of the term, governmental and non-governmental organizations have worked on ways to reach the broader aim. As political scientist Meadowcroft (1997) writes, there have been institutional challenges to planning for sustainable development in these earlier phases. These challenges invite newer attempts to redefine the term and translate it into policies. These efforts have also triggered discussions about what nature is and how it can be protected. Socio-cultural and historical differences among countries have added to the difficulty of reaching a one-for-all definition. In time, an adaptive management perspective is proposed, as well-known scholars of the area Norton (2007) did, to underline the importance of community response and social learning for a successful policy orientation.

In the last decade, the sustainability agenda has been labeled by alarming environmental situations, global warming, and climate change. Providing a recent definition, the U.S. Environmental Protection Agency (2023) states that *“Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment.”* This definition underlines the necessity to create a “productive harmony” between humans and nature for present and future generations.

From the early days of the 1987 Brundtland Report, sustainability is defined basically as a policy concept. This document has been about humanity's wishes for growth and development on the one hand, and the other, limited natural sources. Over time, the concept has been reinterpreted to include three dimensions: social, economic, and environmental (Kuhlman & Farrington, 2010). The World Summit of 2005 held in New York identified three components of sustainable development and admitted their interdependency and mutual reinforcement (Morelli, 2011; Vifell and Soneryd, 2012). In recent years, the three-dimensional approach has been the most common way of operationalization of the abstract concept into real-life policies and measurement of specified dimensions.

The turning point, however, came in 2015 when the Paris Agreement was signed to prevent global warming and the UN defined Sustainable Development Goals (Ilhan, 2021). The Sustainable Development Goals (SDGs), also known as the Global Goals, are adopted as a universal call for action to end poverty, protect the planet, and ensure that all people live in peace and prosperity by 2030 (UN, 2023). The 2030 Agenda includes 169 targets within 17 sustainable development goals to realize the desired future for human development. Among these seventeen goals, the ones, especially about responsible production, inclusion, decent work, gender, climate, and water, are important for business life. More specifically, Target 12.6 encourages large and transnational companies as well as governments to adopt sustainable practices and integrate sustainability information into their reporting cycles (van der Lugt et al., 2020).

### EMERGENCE OF SUSTAINABILITY REPORTS

In the 1970s, the first wave of corporate responsibility emerged with the publication of “social reports” by multinational companies, mostly in the USA and Western Europe. However, in the 1980s, this social reporting lost momentum and interest as it was not institutionalized. At the end of the 1980s, non-financial reports containing environmental elements reappeared (Kolk, 2010).

Companies began to include environmental issues in their annual reports by the early 1990s. However, environmental explanations had been criticized for being biased by just presenting positive actions, which was raising reliability questions resultantly. Following the increasing interest in sustainable development and corporate social responsibility, companies have now begun to turn their environmental statements into corporate social responsibility or corporate sustainability reports by using the “Triple Bottom Line” (Gao, 2011). Elkington, who first used the concept of “Triple Bottom Line” in 1994 regarding sustainability reporting, stated that businesses should go beyond traditional financial reporting and instead report in a triple dimension as economic, social, and environmental (Elkington, 1997).

Concerns about sustainability have become highly relevant to society. For this reason, it is increasingly becoming a part of management decisions, accounting, and reporting practices in both private and public institutions. The purpose of sustainability (performance) management is primarily to harmonize environmental and social goals with business strategies, and then to integrate relevant information in the sustainability reporting of the firms (Dienes et al., 2016). According to the Global Reporting Initiative (GRI), sustainability reporting is the practice of public reporting on an organization’s economic, environmental, and/or social impacts and therefore its positive or negative contributions to the goal of sustainable development (GRI 101, 2016).

Companies may prefer to publish sustainability reports or not due to their different motivations. Reasons for publishing include promoting the utilization of environmental strategy, creating awareness about environmental conditions in the organization, the ability to communicate the corporate message inside and outside the organization, and enhancing credibility and reputation benefits thanks to a high degree of transparency. However, they may prefer not to publish sustainability reports due to doubts about the advantages it will bring to the organization, that competitors do not publish reports, it is too expensive, customers are not interested and believe that it will not increase sales, damage the company’s reputation, and face legal sanctions (Kolk, 2010). In addition to these different motivations, external developments also affect the attitudes of businesses towards sustainability reporting.

One of these external developments is the growing activation of financial market regulators and stock markets in the field of sustainability. Behind this

development lies the demand of data users and analysts for relevant, reliable, comparable, and easily accessible information. Stakeholders are increasingly demanding information useful for decision-making as regulations shape new markets where sustainability data becomes valid. As a result, large and publicly traded companies remain the main target of reporting provisions around the world. This trend is supported by the stock market’s new listing requirements. In addition, sector-specific and thematic reporting provisions are becoming widespread (van der Lugt et al., 2020).

Institutions can benefit from various tools in sustainability reporting such as frameworks, standards, ratings, and indexes. Frameworks are generally based on principles, initiatives, or guidelines provided to help companies explain their sustainability efforts. GRI, SIGMA project, and Carbon Disclosure Project (CDP) are some examples of these frameworks. Standards have similar functions to frameworks, but they are available in the form of more formal documents describing requirements, specifications, or features that can be used to ensure that sustainability efforts are carried out consistently, such as AA100 or ISO14001. Ratings and indexes are third-party evaluations of a company’s sustainability performance like the Asian Sustainability Rating or Dow Jones Sustainability Index (Siew, 2015). Among these, the GRI framework is the most widely accepted one. KPMG report (2022) states that GRI remains the most used reporting standard globally with increased adoption across both the N100 and G250. Despite GRI’s prevalence, it should be said that other standards are also used by having geographical differences, which eventually make it difficult to compare companies and markets regarding their sustainability performances.

GRI Standards include GRI 101 Foundation as the starting point, GRI 102 General Disclosures to report contextual information about an organization, GRI 103 Management Approach to report the management approach for each material topic of GRI 200 Economic, GRI 300 Environmental and GRI 400 Social (GRI 101, 2016). Economic disclosures include thirteen indicators under six dimensions, environmental disclosures include thirty indicators under eight dimensions, and social disclosures include thirty-four indicators under nineteen dimensions. Some of the dimensions, procurement practices, anti-corruption and anti-competitive behavior, energy, water, biodiversity, emissions, child labor, human rights assessment, and local communities can be mentioned.

As mentioned, sustainability reporting is optional for companies. Neither it has a unique standard to use nor

is there a regulation to make it effective. Even though some companies have been taking more responsibility and making an effort to be more accountable for their operations, a lot of them are not still in this movement. In addition to the companies' intent and actions, standards for measuring the triple bottom line of sustainability have been also under continuous change most importantly because of technological improvements. Finally, sectoral and geographical differences are to be taken into account to reach effective reporting for different stakeholders. Keeping these in mind, we would like to narrow our focus on sustainability in agriculture-related business and reporting in that sector.

**SUSTAINABILITY IN AGRI-BUSINESS**

Agribusiness is defined as all activities from farms to final consumers of agricultural products. Ioris (2018: 1648) states that Davis and Goldberg, who are thought of as the inventors of the term, defined agribusiness as "multiple operations involving the manufacture and distribution of farm supplies and the storage, processing, and distribution of agricultural commodities." From then on, the concept has transformed a lot which resulted in a fluidity of the term. Recently, it has been used very broadly to contain direct and indirect activities linked with agriculture. Agribusiness is now one of the largest production sectors in the world in terms of output value, employment, and international trade.

The main function of agribusiness is to produce food in sufficient quantity and quality to maintain a healthy population. Food security and biodiversity are direct consequences of sustainability in agricultural businesses.

In recent years, it has become clear that economic and technological development in agribusiness has not only environmental, social, and institutional impacts but also fundamental nutritional and regional consequences (Wisniewska, 2015). Severe global problems in the food cycle, rising awareness about the ecological, social, and health risks, and alarming climate developments make the modus operandi of agribusiness one of the most controversial sectors.

In line with consciousness towards sustainability, the agribusiness sector is attracting more public attention and resultantly facing increasing pressure to change sustainable management practices. One of the reasons for this development is being of the agribusiness sector in the intersection of various economic and social interests of different parties. The disparities between business realities of modern farm practices and consumer needs or other stakeholders' expectations. For example, intensive livestock farming has been criticized for its high emissions, effects on the nutrient surplus in high animal density areas, long-distance animal transport, and low animal welfare standards. Traditional high-input arable farming has been accused of causing erosion, biodiversity loss, pesticide residues, and nitrate emissions (Friedrich et al., 2012).

Together with these, there have been rising health and ecological concerns in consumer behavior. Resultantly, policy interventions of governmental authorities and management's choices in the agri-food market are mainly aimed at drawing more attention to both food-product quality and environmental protection. Thus, the importance of creating rapid and appropriate responses

**Table 1:** Barriers to Sustainable Agribusiness

	Economic	Environmental	Social
Sustainable Barriers	Inadequate financial support	Poor government policies and regulations on climate change	Lack of technical know-how
		Huge post-harvest loss	Inherent domestic institution constraints
	Extreme poverty	Land acquisition constraints	Gender inequality
		Strong food insecurity	Insufficient scientific research
		Difficulty in adopting new sustainable agribusiness practices	Political interferences
	Collateral handicap	Rampant soil erosion	Underdeveloped social infrastructure to support agribusiness
		Excessive pollution	
		Insufficient innovative ideas for sustainability application	

**Reference:** Brenya et al. (2022).

to sustainability requirements is rising. Along with the growing awareness and public attention for different aspects of the sector, the innovations in knowledge management have also positively contributed to this goal. Big data management has shown its power to provide information on not only food safety and traceability but also product compliance meeting the standards. Technology helps the consumer in demonstrating the transparency of the activities as well as the product quality it provides (Morea et al., 2022).

The whole economic construction including firms, governments, and non-governmental organizations has understood the significance of sustainability more in the last decade. Sustainable practices in the agribusiness sector are expected to become more established in the coming years. Regulators, politicians, investors, and big players in the sector have started to give priority to sustainability in agribusiness on issues such as nature protection, equality, and social justice in agribusiness. On the other hand, there are economic, social, and environmental barriers to ensuring sustainability in agribusiness. Depending on a comprehensive literature review, Brenya et al. (2022) explain these difficulties as seen in Table 1.

The table presents different barriers in a nutshell. It includes not only general issues such as poverty and gender equality but also problems specific to the agribusiness sector such as collateral handicaps, land acquisition constraints, huge post-harvest loss, or underdeveloped social infrastructure. Such an analytical description of the problems depending on the recent literature underlines the necessity to search sector-specific situations in different countries more, as underlined in the article.

## **SUSTAINABILITY REPORTING IN AGRIBUSINESS**

In line with the increasing interest in sustainability in agribusiness, companies in this sector have started to act and publish sustainability reports. To understand the role of sustainability reporting in agri-business, Topp-Becker and Ellis (2017) analyze sixteen reports of the companies selected from the US agricultural supply chain. One of the conclusions of this study is the slowness of the agricultural industry in reporting efforts, which is in line with the previous studies suggesting that agribusiness' response to sustainability has been reactive, not proactive. Moreover, scholars show sustainability reporting changes according to industry segments, such as the input sector, food manufacturers, and retailers, and aspects of economic, social, and environmental. They

show that input suppliers have the highest prevalence in reporting, which includes environmental information disproportionately more than other elements of the triple bottom line, economic and social.

Buallay (2021) aims to investigate the relationship between sustainability reporting and financial performance in the food industry. She summarizes different positions in the literature, such as arguing for positive, negative, and neutral relations. Depending on regression analysis on a sample comprised of 1426 observations from 31 different countries for a decade, she concludes that there is a significant relationship between economic, social, and governance (ESG) and financial performance (ROE). Yet, ESG and operational performance (ROA) and market performance (TQ) are not significantly related. Buallay underlines the important role of the food sector in adopting sustainability goals not only for environmental and social reasons but also to perform better in financial terms.

Jindřichovská et al. (2020) conducted a case study on the sustainability reports published between 2014 and 2018 by Cargill, a US multinational agri-food company. They see the quick adaptation of CSR and sustainability reporting by the company to better communicate with its stakeholders. Another case study belongs to Bocken, Morales, and Lehner (2020) on Oatly, a Swedish food company offering plant-based dairy alternatives. The scholars use in-depth interviews conducted with firm representatives and sustainability reports of the company as data sources for understanding the possibility of sufficiency business strategies in the food industry. They conclude that the focus on scaling up the business at Oatly has priority before other sufficiency strategies.

Paarlberg (2022) examines the food packaging industry in the Netherlands to reveal the reasons behind the sustainability reporting practices of companies. According to the results of the case study, stakeholder management, social pressure, and regulatory pressure push companies to publish sustainability reports. Also, corporate size, ownership structure, and visibility affect the structure and quality of sustainability reports. On the other hand, although moral duty, media reputation, and human resource management affect participation and strategies for sustainability, it has been found to have a lower impact on sustainability reporting.

A study of food retailers in Spain examines the extent of participation in SDG 12 (Vallet-Bellmunt, et al., 2023). As a result of the content analysis on the non-financial reports and disclosures of the retailers, the researchers

show that while SDG 12.4 (management of chemicals and wastes) and SDG 12.2 (efficiency of natural resources) targets have more comprehensive disclosures, SDG 12.5 (promoting a circular economy) and SDG 12.8 (sustainable consumption) targets have weaker disclosures. The study shows that food retailers in Spain regard sustainable production as more significant than sustainable consumption.

Westerholz and Höhler (2022) examine the effect of organizational form on sustainability reporting. The study compares cooperative dairies and investor-owned dairies in Germany by analyzing the statements and reports on the websites of the organizations. The analysis shows that the sustainability reports of the cooperatives are of higher quality than the investor-owned dairies. However, while cooperatives have more comprehensive reports in terms of social and environmental aspects, it has been seen that the reports of investor-owned dairies on animal ethics are more comprehensive.

In a study conducted on listed companies in France (Mnif Sellami et al., 2019), the determinants of the demand for sustainability report assurance (transparency and accuracy of information on sustainability) are investigated. Depending on the sustainability and annual reports of the companies, it is seen that although ownership concentration does not affect sustainability report assurance, companies with corporate participation and corporate social responsibility committees are more likely to provide sustainability report assurance. However, the pressure created by stakeholders has a positive effect on the demand for sustainability report assurance refillable packaging.

Turkish companies have been producing sustainability reports as their global counterparts. In a study conducted on companies in the Fortune 250 List in Turkey, reporting on environmental and social issues increased significantly in the period from 2004 to 2014. Another argument of the same study is that the culture of sustainability reporting has spread from international companies to local companies (Ensari et al., 2016). The tendency to publish sustainability reports in Turkish firms is also noted by Ertan (2018) showing the increasing number of reports since 2005, most of which are using GRI reporting standards.

These reports of Turkish companies have been examined from different aspects, such as corporate reputation (Özçelik et al., 2015; Arslan and Albayrak, 2019), corporate social responsibility (Şardağı and Coşkun, 2020), financial performance (Düzer & Önce,

2017; Dağistanlı & Çelik, 2023), industrial differences (Yıldız, 2022; Başkaya & Taş, 2021), ownership structure (Doğan, 2021), enterprise-scale (Şahin & Çankaya, 2018; Gümrah & Büyükipekçi, 2019) or BIST Sustainability Index (Kocamış & Yıldırım, 2016).

There are also certain scholarly works published in Turkish investigating sustainability reports with a focus on agri-business. Akkan and Bozkurt (2020) focus on food retailers during the pandemic period and analyze six reports, two of which are annual reports and four sustainability reports. Researchers focus on the social aspect and identify four dimensions, human resource practices and decent work, human rights, society, and product responsibility, whether they are included in the reports or not. While Migros has the best score for inclusion of social dimensions in its non-financial reporting, Metro and Carrefoursa strikingly score low despite their multinational status, as the study concludes. Another research belongs to Yiğit and Yiğit (2016) analyzing the status of big companies in the food and beverage industry regarding their sourcing practices. Depending on open-source documents of the companies and interviews with firm representatives, they conclude the companies' insufficiency of valuing sustainability.

## RESEARCH METHODOLOGY

### Research Design

This article attempts to understand the current situation in sustainability reporting in the Turkish agri-food industry. To reach this aim, we search for BIST companies in the related sectors and make a qualitative study on their most recent sustainability reports. The reason for focusing on BIST companies is the availability of open-source data belonging to those firms since they are listed. Another reason for our BIST focus is that the more corporate and bigger the firm, the higher the tendency to address sustainability issues, as shown in van der Lugt et al. (2020), Sierra-García et al. (2015), and Ensari et al. (2016).

Sampling is started by checking out agri-food firms in the BIST lists. Three companies are listed under agriculture, forestry, and fishing; thirty-six are under food, beverage, and tobacco; and twenty-five are under wholesale and retail trade. After having this list of 64 companies, we have searched their websites for sustainability reports. This research shows that only 13 of them have open-to-public sustainability reports. Among the remaining 51 firms, 13 of them have some explanations about sustainability on their websites, yet, still, neither of these thirteen has a full

report, and hence is not included in the analysis. Two of the thirteen companies having an available sustainability report are also excluded from the analysis. The reason for the first exclusion is that one is just providing a checklist document to the Capital Markets Board of Turkey showing the company's status regarding sustainability reporting. The second company's report is excluded because that company was recently acquired by a multinational and the provided report is full of the main firm's international operations, not specific to Turkey.

**Table 2:** Companies Included in The Sample

Company	Year	Reporting Standard
Ülker	2021	GRI Basic GRI Food Sector Appendix
Türk Tuborg	2021	GRI Basic
Şok	2021	GRI Basic GRI Food Sector Appendix
Pınar Süt	2021	GRI Basic
Migros	2022	GRI Integrated
Kereviş	2021	GRI Basic GRI Food Sector Appendix
Coca-Cola	2022	GRI Integrated
Carrefour	2021	GRI Basic
Bizim Toptan	2021	GRI Basic
Bim	2021	GRI Basic
Anadolu Efes	2021	GRI Basic

Our sample includes eleven companies operating in agriculture-related industries and listed in BIST. The sustainability reports of these 11 firms are taken from their websites in March and April 2023. Their most recent reports are included in the analysis so nine reports are from 2021 and two from 2022. Regarding reporting standards, two of them use GRI Integrated Standards and the remaining nine GRI Basic. Among these nine, three of them state that they benefit also from GRI Food Sector Standards, which have still been piloted as specified GRI. Table 2 shows detailed information about our sample.

## Data Analysis

This article presents a qualitative analysis of the most recent sustainability reports of agri-food companies listed in BIST. Qualitative research is a research design that usually emphasizes words rather than quantification in the collection and analysis of data. Especially in recent years, there has been an increasing interest in studies following qualitative research in different social science areas despite certain methodological criticisms about reliability and validity (Bryman, 2012: 380-412). Emphasis on seeing through the eyes of the people being studied and on describing the context and process are thought as the most important advantages of qualitative research. Ethnography, interviews, focus groups, language studies, and document searches are the main research methods of qualitative design. Among these, this study uses documents as sources of data.

Bryman (2012: 544) underlines by referencing Scott's work that a qualitative design using documents should assess the quality of the documents with four main criteria authenticity, credibility, representativeness, and meaning. The agri-food companies' sustainability reports are authentic in the sense that they are genuinely produced by the company itself; representative in the sense that the company opens them to public usage; and credible in the sense that the company declares the content. Regarding credibility, it should also be noted that some of the companies in the sample such as Ülker and Anadolu Efes provide limited assurance forms given by independent auditor firms. The last assessment criterion of meaning is also satisfied by the reports since the evidence is clear and comprehensible as they are presented according to the current standards of sustainability reporting. As a result, sustainability reports can be used as reliable and valid sources of data.

This article includes eleven sustainability reports of agri-food companies depending on the selection criteria clarified above. While coding the documents, we use the classification of GRI 13 Agriculture, Aquaculture, and Fishing Sectors standards. The analysis below first presents three dimensions of economic, social, and environmental standards of GRI 13. Following, a frequency analysis of selected codes is presented. The codes we selected for analysis due to their importance for the agri-food sector are sustainable agriculture, cooperative, woman entrepreneur, STEM, palm oil, small producer, good agriculture, woman farmer, native seed, and geographical indication product. This selection depends on the recent topics heatedly discussed in the literature for sustainable agriculture in general and structural

adjustment of agriculture, agricultural organization, women empowerment, and crop quality in particular (McMichael, 2013; Friedmann, 2009; Goodman & Watts, 1997; Bernstein, 2017; OECD, 2021). MAXQDA software is used for developing themes, codes, dimensions, and other visual tools.

## FINDINGS AND DISCUSSION

All eleven documents are 1,375 pages long including 430,607 words. The longest is the integrated report of Migros with 342 pages and the shortest to Kerevitaş and Bizim Toptan with 46 pages. Figure 1 shows the word cloud of all quantitative data analyzed. Word cloud is a visual tool to show the relative frequency of words in documents. While producing the figure, we eliminate irrelevant words such as prepositions, conjunctions, or propositions, and clear the data. As seen in Figure 1, sustainability, management, corporate, integrated, and Turkey are the most common words in the reports as they seem bigger and more central than others. Following, energy, woman, GRI, employee, product, waste, value, and food are also used a lot in the reports.



**Figure 1:** Word Cloud of Sustainability Reports

The analyzed eleven reports have different structures as they are not using a predefined format. In general, economic, social, and environmental topics are stated with different headlines such as “100 percent contribution to economy and business” in Türk Tuborg’s report, “Taking care of our employees,” in Pınar Süt’s report, “We are increasing our social impact” in Anadolu Efes’s report and “It will do good for our planet” in Migros’s report. Some of them highlight the topic of quality in goods and

services like BİM, some innovations like Ülker, and some stakeholders like Kerevitaş as they present these topics as separate headlines.

The informative nature is underlined in the reports meaning that they are not independently audited. Yet, while Ülker and Anadolu Efes present limited assurance reports from an independent auditor, Migros, and Coca-Cola state their reports have been independently audited. Nine of the eleven reports present GRI disclosure tables at the end while two of them, namely Türk Tuborg and Kerevitaş reports, do not have such type a summary. A general overview of the data shows that three reports are exclusive with their comprehensive content, Carrefour’s sustainability report and integrated reports of Migros and Coca-Cola. In line with the focus of this study, two important policies of these companies are worth mentioning. First, Carrefour creates a “Food Transition Index” for inner evaluation of the change in fifteen different topics like sustainable farming, animal welfare, local producers, and gender equality. Second, Coca-Cola has its own “Principles of Sustainable Agriculture” policy aiming at all “direct suppliers, intermediary processors, producing farms and labor agencies” to protect social and environmental standards for human and workplace rights, environment and ecosystems, animal health and welfare, and farm management systems. Keeping this general overview of the reports, we can now present the findings and results reached by thematic analysis by codes and themes and frequency analysis.

The sustainability reports published by eleven companies are analyzed in three-dimensional (economic, social, and environmental standards) and one-dimensional (all standards) within the framework of the standards of GRI 13 (GRI 13, 2022). In addition, apart from the GRI 13 framework, the themes that we find important for the agri-food sector and create for this study have been analyzed. The findings obtained as a result of the analysis are as follows.

Table 3 shows the total number of disclosures belonging to GRI 13 standards and agrifood sector-focused key themes in companies’ sustainability reports. While there are 4140 disclosures belonging to GRI 13 standards, 388 disclosures are found in agrifood sector-focused key themes. The distribution by the company shows that Pınar Süt (n=930), Coca-Cola (n=765), and Migros (n=653) have the highest number of disclosures in GRI 13 standards while Bizim Toptan (n=75) and Şok (n=108) have the least. In addition, the companies with the highest number of disclosures in agrifood sector-focused key themes are Migros (n=134), Pınar Süt (54),



**Table 3:** Total GRI 13 Standards and Agrifood Sector-Focused Key Themes Disclosures in Companies' Sustainability Reports

Company	The number of Disclosures belonging to GRI 13 Standards	Company	The number of Disclosures belonging to Agrifood Sector Focused Key Themes
<b>Pınar Süt</b>	<b>930</b>	<b>Migros</b>	<b>134</b>
Coca-Cola	765	Pınar Süt	54
Migros	653	Coca-Cola	48
Carrefour	395	Anadolu Efes	35
Anadolu Efes	351	Ülker	30
Türk Tuborg	268	Carrefour	27
Ülker	233	Kereviş	23
Kereviş	214	Türk Tuborg	12
Bim	148	Şok	11
Şok	108	Bim	10
Bizim Toptan	75	Bizim Toptan	4
<b>Total</b>	<b>4140</b>	<b>Total</b>	<b>388</b>

**Table 4:** Analysis of GRI 13 Standards in the Economic Dimension

Standards	Number of Disclosures	Percentage of Disclosures	Number of documents including the code
Anti-corruption	101	82,11	11
Economic inclusion	10	8,13	5
Anti-competitive behavior	6	4,88	4
Supply chain traceability	3	2,44	3
Public policy	3	2,44	2
<b>Total</b>	<b>123</b>	<b>100,00</b>	-

**Table 5:** Analysis of GRI 13 Standards in the Social Dimension

Standards	Number of Disclosures	Percentage of Disclosures	Number of documents including the code
Non-discrimination and equal opportunity	167	18,27	11
Employment practices	163	17,83	11
Food safety	145	15,86	11
Animal health and welfare	92	10,07	8
Food security	83	9,08	10
Freedom of association and collective bargaining	81	8,86	8
Occupational health and safety	78	8,53	9
Local communities	39	4,27	10
Living income and living wage	31	3,39	5
Child labor	25	2,74	7
Forced or compulsory labor	10	1,09	4
Rights of Indigenous Peoples	0	0,00	0
Land and resource rights	0	0,00	0
<b>Total</b>	<b>914</b>	<b>100,00</b>	-

and Coca-Cola (n=48), and the ones with the least are Bizim Toptan (n=4) and Bim (n=10).

Table 4 shows the frequency analysis of GRI 13 standards in the economic dimension. Among 123 total disclosures, the most frequently seen item is the anti-

corruption standard (n=101), constituting %82,11 of the standards in the economic dimension. On the other hand, the number of references to public policy and supply chain traceability standards (n=3) is the lowest. Disclosures on supply chain traceability are included in the sustainability reports of three companies, Anadolu

**Table 6:** Analysis of GRI 13 Standards in the Environmental Dimension

Standards	Number of Disclosures	Percentage of Disclosures	Number of documents including the code
Water and effluents	1247	40,19	11
Waste	1004	32,36	11
Emissions	387	12,47	11
Climate adaptation and resilience	223	7,19	11
Biodiversity	127	4,09	9
Soil health	58	1,87	9
Natural ecosystem conversion	50	1,61	10
Pesticides use	7	0,23	4
<b>Total</b>	<b>3103</b>	<b>100,00</b>	-

**Table 7:** Analysis of All GRI 13 Standards

Standards	Number of Disclosures	Percentage of Disclosures
Water and effluents	1247	30,12
Waste	1004	24,25
Emissions	387	9,35
Climate adaptation and resilience	223	5,39
Non-discrimination and equal opportunity	167	4,03
Employment practices	163	3,94
Food safety	145	3,50
Biodiversity	127	3,07
Anti-corruption	101	2,44
Animal health and welfare	92	2,22
Food security	83	2,00
Freedom of association and collective bargaining	81	1,96
Occupational health and safety	78	1,88
Soil health	58	1,40
Natural ecosystem conversion	50	1,21
Local communities	39	0,94
Living income and living wage	31	0,75
Child labor	25	0,60
Forced or compulsory labor	10	0,24
Economic inclusion	10	0,24
Pesticides use	7	0,17
Anti-competitive behavior	6	0,14
Supply chain traceability	3	0,07
Public policy	3	0,07
Land and resource rights	0	0,00
Rights of Indigenous Peoples	0	0,00
<b>Total</b>	<b>4140</b>	<b>100,00</b>

Efes, Bizim Toptan, and Şok, and on public policy in two companies' reports, Anadolu Efes and Carrefour.

Table 5 shows the frequency distribution of GRI 13 standards in the social dimension. As seen, the highest frequency belongs to the nondiscrimination and equal opportunity standard (n=167, % 18.2). This is followed by

employment practices (n=163, % 17.83) and food safety (n=145, % 15.86). Sustainability reports of all eleven companies contain disclosures of these three standards. On the other hand, no disclosure is found for the rights of indigenous peoples and land and resource rights standards.

**Table 8:** Analysis of Agrifood Sector-Focused Codes

Themes	Number of Disclosures	Percentage of Disclosures	Number of documents including the code
Certificate	194	50,00	11
Sustainable agriculture	103	26,55	9
Cooperative	37	9,54	6
Woman entrepreneur	13	3,35	5
STEM	12	3,09	5
Palm oil	10	2,58	3
Small producer	6	1,55	3
Good agriculture	5	1,29	3
Woman farmer	3	0,77	2
Native seed	3	0,77	2
Geographical indication product	2	0,52	2
<b>Total</b>	<b>388</b>	<b>100,00</b>	-

Table 6 shows the frequency distribution of GRI 13 standards in the environmental dimension. Among a total of 3103 references, the highest frequency is seen in the water and effluents standard (n=1247, % 40.19). This is followed by the waste standard (n=1004, % 32.96). In addition to these two, emissions and climate adaptation and resilience are the other two standards included in all of the reports in the sample. On the other hand, the pesticide use standard has the lowest frequency referenced only seven times in only four companies' reports, namely Bim, Carrefour, Kereviyaş, and Migros.

When the GRI standards are examined in three dimensions of economic, social, and environmental separately, it is seen that the most reference is given to the environmental dimension (n=3103). This is followed by the social dimension (n=914) and the economic dimension (n=123). However, when the standards are examined in one dimension, it is seen that the water and effluents (n=1247), waste (n=1004), and emissions (n=387) are the ones taking the highest frequency. Table 7 shows all standards regardless of their dimension sorted according to their frequency.

In addition to the GRI 13 Framework, we create themes specific to the agri-food sector and search for these themes in the sustainability reports. Table 8 shows the frequency distribution of agrifood sector-focused key themes. As seen, the certificate is the most frequently referred disclosure (n=194) included in all eleven reports. Sustainable agriculture (n=103) is second included in 9 of the reports. The third key theme is cooperation with 37 references, yet it is strikingly less frequent than the first two. Gender theme is found in two separate keywords for woman entrepreneur and woman farmer. While the first is used in five reports with a relatively low reference

number of 13, the second is seen in just two reports (Migros and Pınar Süt) with just three references. Other two topics taking relatively little attention are the native seed (n=3) and geographical indication product (n=2) themes. Both themes are seen in just two reports, Migros and Carrefour.

As seen in the above analysis of sustainability reports, anti-corruption is referred to most in the economic dimension. Since corruption is illegal, it has serious sanctions by regulatory authorities. In this respect, it can be said that companies take care both to comply with the law and to protect their image before society. For the social dimension, the highest frequency is seen in the nondiscrimination and equal opportunity code. This is followed by employment practices and food safety. Accordingly, it can be said that companies care about human rights within the framework of sustainable development and integrate their human resources policies into sustainability. At the same time, their focus on food safety is an important development in sustainable agriculture.

In the environmental dimension, water and effluents, waste, and emissions issues have the most emphasis. It can be said that companies try to comply with these three standards due to strict supervision both on a global and national basis. These environmental results are in parallel with the study of Vallet-Bellmunt, et al. (2023).

The sustainability reports of agri-business-related Turkish companies show that they focus on the environmental dimension the most and the economic dimension the least. When the standards are evaluated in one dimension, water, and effluents, waste has the highest mention among the twenty-six subdimensions.

Institutional theory can be helpful to explain this result. The fact that water effluents and waste standards are included more than others in sustainability reports can be attributed to the fact that the audits and sanctions related to these standards are strong and the stakeholders are more demanding in this regard. According to the institutional theory, companies need to be accepted by their environment to continue their lives (Sözen & Basım, 2015). Therefore, as supported by previous studies on sustainability (Paarlberg, 2022; Vallet-Bellmunt et al., 2023; Westerholz & Höhler, 2022; Mnif Sellami et al., 2019; Topp-Becker & Ellis, 2017), it can be said that companies progress based on institutionalization, and thus, they mostly act reactively. In parallel, it can be stated that water effluents and waste standards have been institutionalized.

The least important topics in the sustainability reports, which have less than 50 references in total in all reports, are local communities, living income, child labor, forced labor, economic inclusion, pesticide use, anti-competitive behavior, supply chain traceability, public policy, land and resource rights and rights of indigenous people. Even the last two codes, land and resource rights and rights of indigenous people have no reference at all. Some of the least attended topics, such as child labor, economic inclusion, pesticide use, or land and resource rights, are important for the specific configuration of Turkish agriculture (Günaydın, 2009; Gürsoy & Dodurka, 2016; Gümüş & Wingenbach, 2016). The interest of agribusiness firms on these topics can be game changers in fundamental problems of farms. Such an interest will prove itself to measure basic indicators, quantify different aspects of multilayered social problems, and be helpful for the formulation of exemplary policies. More inclusion of these issues in sustainability reports in near future will be a good way of showing that interest for the firms.

The codes we select to analyze also present interesting results. As shown, the reports mostly focus on certificates and sustainable agriculture. Certification is an application that increases the efficiency and reliability of processes in sustainable agriculture, hence, in the long run, the topics will keep their importance in the shaping of the Turkish agri-food sector (Keyder & Yenil, 2011; Kenanoğlu & Karahan, 2002; Çakırlı Akyüz & Theuvsen, 2021). The scale problem of agriculture has long been discussed and cooperatives are thought one of the best ways of overcoming this (Westerholz & Höhler, 2022; Sönmez & İzgi, 2022). Following this trend, 6 out of 11 reports address this issue to show the importance of cooperatives and larger-scale organization of agricultural production

for reaching sustainability aims. On the other hand, native seed and geographical indication products are just mentioned in two reports. Both topics have greater importance in sustainable agriculture, product quality, and protection of traditional know-how (Joshi, 2021; Kan & Kan, 2020). Therefore, agri-business companies may pay more attention to these themes for stakeholder awareness, policy formation, and gaining comparative advantage.

Finally, for the codes generated for this article, it is seen that gender issue has a relatively unimportant place in sustainability reports. This is striking also concerning the rising awareness about rural women empowerment and the promotion of women cooperatives as solutions to basic structural problems (OECD, 2021; Özsayın & Korkmaz, 2021; Kurtege Sefer, 2020). Gender incentives given by these big companies to their backward sectors, especially agriculture and processing will improve the conditions of the rural population in general and rural women in particular. Hence, greater addressing of gender issues in entrepreneurship and farming practices has the potential to feed the sustainability agenda further for agri-business firms.

## CONCLUSION

Kenneth P. Pucker (2021), who was formerly COO of Timberland and now a senior lecturer at the Fletcher School, wrote an article titled "Overselling Sustainability Reporting" and published in Harvard Business Review. In that article, Pucker discusses the measurement and reporting efforts of the last two decades about sustainability, which have eventually come short of preventing neither environmental damage nor social inequality. He identifies several problems reporting suffers such as lack of mandates and auditing, specious targets, opaque supply chains, complexity, confusing information, and inattention to developing countries. His rich and insightful piece ends the necessity to "change the system" by including for example an "incentive for the agriculture industry to transition from spewing carbon to sequestering it."

Pucker's article is thought-provoking for the research question of this article, that of whether reporting can make a difference in agriculture-related business or not. Agri-business is a huge industry including all operations from farm-level production to storage, manufacture, and distribution of agricultural commodities. FAO estimates that agrifood systems employ around 1.23 billion people in 2019 all over the world. Moreover, almost half the world's population has some kind of linkage with the

households in agrifood systems (FAO, 2023). This fact together with worsening social and environmental conditions and pandemic crises have added to change in the perception of agriculture in economic construction. By now, the earlier prescriptions of neoliberal doctrine about dismissing agriculture as an unproductive sector inherent with economies of scale problems have recently been abandoned. The following decades will most probably witness a resurgence of agriculture-based development recipes having been informed by social, environmental, and governance dimensions of sustainability. Such a background makes researching the current picture of agribusiness from the lenses of sustainability reports more relevant. This relevance increases for Turkey, which is still a significant country in agriculture and related industries.

This article examines the sustainability reports of agriculture-related firms listed in BIST in Turkey. A detailed search of BIST company lists and their reporting status shows that there are 11 out of 64 agri-business firms publishing sustainability reports. We examine the most recent reports of these companies, which are 1,375 pages long including 430,607 words in total. Qualitative methods including thematic and frequency analysis are applied by MAXQDA software. Both GRI 13 agricultural industry standards of 26 items and self-selected codes of 11 items are used to understand different aspects of sustainability. While there are 4140 disclosures belonging to GRI 13 standards, 388 disclosures are found in agrifood sector-focused codes in total.

Our findings show first that there is no one-fit-all standard and content in sustainability reports. Two of the eleven reports are integrated reports, which have the most comprehensive content, while some others are just seen as public relations material with limited content. This flexibility is most probably because of an absence of any legal requirements for reporting and plurality of standards. An overview of all reports shows that the integrated reports of Coca-Cola and Migros and the sustainability report of Carrefoursa have the most comprehensive content.

Coding results that the most frequently referred topic is the anti-corruption standard in the economic dimension, the non-discrimination and equal opportunity standard in the social dimension, and water and effluents standard and waste in the environmental dimension. The lowest number of codes are seen in the public policy and supply chain traceability standards in the economic dimension, the rights of indigenous peoples, and land and resource rights standards in the social and the pesticides used in the environment. A cross-check of dimensions shows that environmental standards have the highest frequency

by far compared to economic and social codes. The analysis created for this study reveals that certificate and sustainable agriculture are the most popular terms, and native seed and geographical indication products are the least.

Our findings support three specific arguments in the literature. First, the agri-food sector is lagging to catch up sustainability reporting compared to other sectors. As seen, a very small part of whole listed companies is publishing reports. Second, companies are more ready to comply with issues legally regulated. It is not a coincidence that anti-corruption, non-discrimination, and equal opportunity and water and effluents, waste, and emissions are the most frequently mentioned codes as all represent a certain kind of legal enforcement. Third, environmental problems are more addressed than social and economic sustainability standards. This study also shows the relative unimportance of topics such as child labor, economic inclusion, pesticide use, supply chain traceability, land and resource rights, women entrepreneurship, and geographical indication, which can have positive impacts on Turkish agricultural space. A backward push of big companies through integrating these topics into their sustainability reporting process is highly likely to create incremental and pivotal changes in the sector as a whole.

This article presents a qualitative analysis of sustainability reports of big agri-food companies listed in BIST in Turkey. By doing so, it contributes to the literature on sustainability in general and reporting in the agri-food sector in particular. Yet, it has its limitations. First, the sample contains both food processors and retailers. They have different strategic priorities as well as different sustainability focuses. Further research is better to compare these different market positions and their impact on sustainability policies. Another limitation is about the company scales. As this study focuses on the biggest and the most competitive ones, sustainability issues have been at least addressed and produced some real results. Yet, the agro-food sector is characterized by small- and middle-size enterprises, especially in Turkey. Their position regarding sustainability aims cannot be known for now. The following studies may design investigations on these several SMEs in the food sector. Last but not least, sustainability organization in firms also needs to be studied later as the quality and content of reporting will be affected by human resources. As a last word, despite the importance of the research agenda around the theme and while formulating newer studies, Pucker's warnings about overselling of reporting will surely be kept in mind for keeping our feet on the ground.

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