



Application of environmental, social, and governance (ESG) standards in the food industry

Stefan Simunović^{1*} , Saša Janković¹ , Nikola Borjan¹ , Dunja Mišić¹ , Lukić Mirjana¹ ,
Blagoje Stojković²  and Sara Simunović¹ 

¹ Institute of Meat Hygiene and Technology, Kačanskog 13, 11000 Belgrade, Serbia

² University of Belgrade, Faculty of Agriculture, Resavska 58, 11080 Belgrade, Serbia

ARTICLE INFO

Keywords:

ESG

CSR

Sustainability

Meat

Food industry

ABSTRACT

This review examines the main environmental, social, and governance (ESG) standards applied by the food industry. The United Nations has adopted the 2030 Agenda that is generally focused on achieving a more sustainable future. This agenda increased the attention of the public on the application of ESG standards by various industries, including food. The most important group of these are the Global Reporting Initiative (GRI) standards. GRI standards play a pivotal role in shaping sustainability reporting practices globally by establishing a comprehensive framework for organizations to disclose their ESG impacts. As one of the most recognized and widely adopted frameworks, GRI emphasizes transparency and accountability in corporate operations, ensuring that organizations report relevant, accurate, and comparable sustainability data. This review covers the application of ESG standards in the meat sector. Generally, the meat sector is considered to be relatively big contributor of greenhouse gas emissions and a large water consumer. Implementation of ESG standards is essential, as they help organizations demonstrate transparency, align with stakeholder expectations, and meet regulatory obligations while promoting sustainability and ethical business practices.

1. Introduction

The 2030 Agenda for Sustainable Development, adopted by United Nations Member States in September 2015, marks a significant commitment to addressing the global challenges faced by humanity, encompassing issues of poverty, inequality, climate change, environmental degradation, peace, and justice. Comprising 17 Sustainable Development Goals (SDGs) and 169 targets, the agenda underscores an integrative and inclusive approach to development that aspires to improve the quality of life for

all, while ensuring the sustainability of the planet (United Nations, 2015). Notably, the agenda emphasizes that the path to achieving these goals requires collaboration among multiple stakeholders, including governments, civil society, private sectors, and citizens, thereby fostering shared responsibility for sustainable progress and well-being. Furthermore, the interconnected nature of the SDGs implies that actions taken to advance one goal can have positive effects on others, reinforcing the need for cohesive strategies that are context-specific and responsive to local challenges. Ultimately, the successful

*Corresponding author: Stefan Simunović, stefan.simunovic@inmes.rs

Paper received Jun 26th 2025. Paper accepted July 1st 2025.

The paper was presented at the 63rd International Meat Industry Conference “Food for Thought: Innovations in Food and Nutrition” – Zlatibor, October 05th–08th 2025.

Published by Institute of Meat Hygiene and Technology – Belgrade, Serbia.

This is an open access article CC BY licence (<http://creativecommons.org/licenses/by/4.0>)

realization of the 2030 Agenda is contingent upon a collective effort towards transformative actions that ensure equitable resource distribution and uphold the principles of sustainability for current and future generations.

Since adoption of the 2030 Agenda, application of environmental, social, and governance (ESG) standards in the food industry has garnered increasing attention due to increased consumer awareness and shifting regulatory landscapes surrounding sustainability. As global markets evolve, the adoption of ESG practices within this sector not only affects operational efficiency but also significantly impacts stakeholder perceptions and financial performance. The interrelationship between ESG factors and corporate outcomes is particularly important in environmentally sensitive industries like meat and dairy production, where the implications of operational practices on resource sustainability and social responsibility are profound.

Research indicates that food companies that integrate ESG principles into their business strategies can experience improved financial performance as a result of enhanced risk management and reputation (Sandberg et al., 2022). These dynamics are articulated within the context of various industries, including food (Ahmed et al., 2023), where the relationship between sustainability practices and financial benefits has become more pronounced. Specifically, the meat and dairy industry, characterized by its carbon emissions and resource-intensive operations, must navigate the complex landscape of ESG standards to mitigate risks associated with environmental and social governance (Stojkovic et al., 2025).

Moreover, technological advancements, such as the implementation of Industry 4.0 technologies, are reshaping operational paradigms in the meat sector. Such innovations not only streamline processes but also enhance compliance with ESG standards by optimizing resource use and reducing waste (Echeagaray et al., 2022). The interplay between technological integration and ESG compliance serves as a pivotal factor in driving sustainability within the industry, as companies strive to meet both regulatory standards and consumer expectations.

Furthermore, understanding the specific ESG risks and opportunities in the meat industry forms the cornerstone of effective sustainability reporting and strategy. Companies are increasingly adopting a tailored approach to navigate the unique challenges they face, which range from animal welfare concerns

to environmental impacts related to production practices (Boiral et al., 2024). This shift towards a comprehensive ESG strategy reflects a broader transformation within the agricultural sector, underscoring the need for robust frameworks that align business objectives with sustainability goals.

2. Standards covering ESG reporting

ESG reporting is covered by several standards and frameworks that guide disclosure and assessment practices across various industries. These standards are essential as they help organizations demonstrate transparency, align with stakeholder expectations, and meet regulatory obligations while promoting sustainability and ethical business practices.

2.1. Global reporting initiative (GRI)

One prominent framework for ESG reporting is the Global Reporting Initiative's (GRI's) standards, which provide comprehensive guidelines that underline the importance of sustainability reporting by mandating organizations to disclose their economic, environmental, and social impacts (Barai-Diez & Odriozola, 2019). GRI encourages consistency and comparability in reporting, fostering a deeper understanding of corporate responsibilities and performance in aligning with sustainable development goals (Park & Jang, 2021). As one of the most recognized and widely adopted frameworks, GRI emphasizes transparency and accountability in corporate operations, ensuring that organizations report relevant, accurate, and comparable sustainability data (Leeson & Kuszewski, 2023; Yehezkiel et al., 2023). This framework promotes stakeholder engagement by positioning stakeholders as central to the sustainability reporting process. The GRI actively involves affected parties in its standard-setting activities, allowing for a collaborative approach that reflects the diverse interests and concerns of these stakeholders (Leeson & Kuszewski, 2023). Furthermore, the GRI standards are designed to be adaptable across various sectors, enabling organizations of all types and sizes to tailor their disclosures to accurately reflect their sustainability practices and performance (Yehezkiel et al., 2023). The thoroughness of the GRI framework ensures that organizations not only communicate their sustainability efforts but also foster a culture of continuous improvement and ethical responsibility, thus

enhancing their overall credibility and societal trust (Villiers *et al.*, 2022).

2.2. International sustainability standards board (ISSB) standards

The International Sustainability Standards Board (ISSB) plays a critical role in establishing a global framework for sustainability reporting, aiming to enhance the transparency and comparability of sustainability-related financial disclosures. Launched under the auspices of the International Financial Reporting Standards (IFRS) Foundation, the ISSB's primary objective is to develop standards that address the evolving expectations of investors and other stakeholders regarding ESG factors (van Wijk & Els, 2023). The ISSB has introduced two key standards, IFRS S1 and IFRS S2, which focus on general sustainability reporting and climate-related disclosures, respectively. These standards underscore the importance of detailed disclosures on sustainability risks and their financial implications, promoting a double materiality perspective that reflects both how sustainability issues affect an organization and how the organization's activities impact the environment and society (Zdolšek & Beloglavec, 2023). The initiative also seeks to harmonize sustainability reporting with existing financial reporting standards, thereby fostering a more integrated approach to corporate reporting (Sabauri & Kvatahidze, 2023). As the ISSB develops its standards, it continuously engages with stakeholders and industry experts to ensure that the frameworks remain relevant and practically implementable, thus addressing the complexities of sustainability reporting in an ever-changing global landscape (Kulik & Dobler, 2023). Consequently, the ISSB stands at the forefront of driving the shift towards more sustainable business practices by providing clear guidelines that encourage companies to disclose and manage their sustainability impacts effectively.

2.3. Other standards

Another group of standards was introduced by the Sustainability Accounting Standards Board (SASB), which focuses on sector-specific ESG metrics that highlight material sustainability information for investors. By establishing industry-targeted standards, SASB aids companies in identifying and reporting on the most relevant ESG issues that could impact their financial performance, thus bridging the

gap between traditional financial reporting and sustainability metrics. This approach allows for cross-sector comparisons and ensures that investors are well-informed regarding the sustainability risks associated with their investments.

Another significant framework is the United Nations Global Compact, which outlines ten principles covering human rights, labour, the environment, and anti-corruption. Companies that align with these principles are encouraged to report on their advancements and challenges in fulfilling them, thereby integrating ESG into their core business strategies. This helps businesses proactively manage their social and environmental impacts while fostering a culture of accountability and ethical governance and consequently positively affecting reputation of the company (Praveen & Mohammad, 2022).

3. Application of ESG standards in the meat industry

The global meat sector is currently facing increasing scrutiny regarding its ESG practices. This heightened attention is driven by consumers becoming more conscious of the ethical, environmental, and health impacts associated with meat production, prompting shifts within the industry toward adherence to ESG guidelines. These frameworks aim to prioritize sustainability, animal welfare, and robust governance systems while enhancing the public image of the meat sector and ensuring its long-term viability. Given the urgent concerns related to climate change, water scarcity, deforestation, and the environmental repercussions of livestock farming, the meat industry is under significant pressure to adopt greener and more ethical practices (Briscoe, 2022). The study of Rajic *et al.* (2021) examined the application of ESG data by the 75 largest food companies in the world according to total revenue and compared compliance of ESG practices of plant and animal origin food companies. The results showed that even the world's largest companies have gaps in ESG reporting, which demonstrates the complexity and complexity of implementing standards in the industry. On the other hand, small- to medium-scale (SME) meat producers face significant challenges in applying environmental, social, and governance (ESG) standards due to their limited administrative, technical, and financial resources. This limitation hinders their ability to effectively implement and adhere to these standards compared to larger corporations, which

typically have more robust infrastructures in place for ESG compliance (Lam et al., 2024; Yip et al., 2024).

From the climate perspective, the meat industry ranks among the largest of industrial contributors to global greenhouse gas emissions, primarily through methane production from livestock, which poses a significant environmental threat (Nalon et al., 2021). The complicated task of accurately calculating emissions from various phases of meat production—spanning farming, feed supply, transportation, and processing—is complicated by a lack of consistent, globally accepted metrics (Coleman et al., 2022). Additionally, the substantial water consumption involved in meat production, particularly in beef production, raises concerns due to its extensive water footprint, with irrigating feed crops and livestock hydration contributing to this issue (Mekonnen & Hoekstra, 2011).

Deforestation linked to meat production, especially linked to cattle ranching in areas like the Amazon region, poses another severe environmental challenge. This practice leads to biodiversity loss and exacerbates climate change (Mekonnen & Hoekstra, 2010). However, companies often struggle to track their deforestation impacts accurately, particularly when sourcing from regions with weak regulatory frameworks (Sinclair et al., 2017). Overall, the meat industry's move toward incorporating ESG practices reflects recognition of the need for sustainable development that balances productivity with responsible environmental stewardship (Howell et al., 2016).

Disclosure Statement: No potential conflict of interest was reported by the authors.

Funding: The study was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Contract number 451-03-136/2025-03/200050 from 04.02.2025)

References

- Ahmed, E. R., Alabdullah, T. T. Y., & Akyürek, M. (2023). Management of Innovations in the Environmental, Social, and Governance Scores and Sustainability Performance Through ESG Disclosure: Evidence From Emerging Markets. *Marketing and Management of Innovations*, 14(4), 69–83.
- Baraibar-Diez, E., & Odriozola, M. D. (2019). CSR Committees and Their Effect on ESG Performance in UK, France, Germany, and Spain. *Sustainability*, 11(18), 5077.
- Boiral, O., Brotherton, M. C., Talbot, D., & Guillaumie, L. (2024). Assessing and Managing Environmental, Social, and Governance risks in Agri-food Companies. *Corporate Social Responsibility and Environmental Management*, 31(6), 5690–5708.
- Briscoe, M. D. (2022). The Meatless Menu Paradox? Environmental Theory and Plant-Based Fast-Food Options. *Society and Animals*, 31(5–6), 815–824.
- Coleman, G. J., Hemsworth, P. H., Hemsworth, L. M., Munoz, C. A., & Rice, M. (2022). Differences in Public and Producer Attitudes Toward Animal Welfare in the Red Meat Industries. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.875221>
- Echegaray, N., Hassoun, A., Jagtap, S., Tetteh, M. G., Kumar, M., Tomašević, I., . . . Lorenzo, J. M. (2022). Meat

4. Conclusion

In conclusion, the 2030 Agenda for Sustainable Development is a pivotal framework advocating for holistic progress across various sectors, including the imperative of adopting ESG standards within the food industry. As the meat sector navigates increased consumer awareness regarding ethical, environmental, and health issues, the integration of ESG principles has become crucial in addressing these concerns and enhancing corporate accountability. The interconnectedness of the SDGs emphasizes the necessity for collaborative action and tailored strategies that align with local contexts and stakeholder needs. In response to the mounting pressures of climate change, resource scarcity, and social responsibilities, it is incumbent upon the meat industry to embrace innovative practices and technologies that facilitate compliance with ESG standards and promote sustainable operations. Furthermore, the rise of frameworks such as GRI and ISSB underscores the importance of transparency and accountability, guiding companies in their sustainability reporting efforts and providing a framework, that is, most importantly, comparable globally. Ultimately, achieving progress towards the 2030 Agenda necessitates a concerted commitment to sustainability that is not only reflected in established procedures but also embedded in the corporate culture of the meat industry. By fostering a comprehensive approach to ESG implementation, the industry can secure its legitimacy, enhance its resilience, and contribute to a more sustainable future for all.

- 4.0: Principles and Applications of Industry 4.0 Technologies in the Meat Industry. *Applied Sciences*, 12(14), 6986.
- Howell, T. J., Rohlf, V., Coleman, G. J., & Rault, J. L. (2016).** Online Chats to Assess Stakeholder Perceptions of Meat Chicken Intensification and Welfare. *Animals*, 6(11), 67.
- Kulik, A., & Dobler, M. (2023).** Stakeholder Participation in the ISSB's Standard-Setting Process: The Consultations on the First Exposure Drafts on Sustainability Reporting. *Sustainability Accounting Management and Policy Journal*, 14(7), 349–380.
- Lam, W. L., Nie, L., & Chan, E. K. (2024).** Firms' preferences for environmental, social, and governance policies: evidence from small and medium enterprises in Hong Kong. *Business Strategy and the Environment*, 34(2), 2207–2221. <https://doi.org/10.1002/bse.4100>
- Leeson, R., & Kuszewski, J. (2023).** GRI and Stakeholder Engagement: Setting Standards in the Public Interest. *Sustainability Accounting Management and Policy Journal*, 14(4), 877–883.
- Mekonnen, M. M., & Hoekstra, A. Y. (2010).** A Global and High-Resolution Assessment of the Green, Blue and Grey Water Footprint of Wheat. *Hydrology and Earth System Sciences*, 14(7), 1259–1276.
- Mekonnen, M. M., & Hoekstra, A. Y. (2011).** The Green, Blue and Grey Water Footprint of Crops and Derived Crop Products. *Hydrology and Earth System Sciences*, 15, 1577–1600. <https://doi.org/10.5194/hess-15-1577-2011>.
- Nalon, E., Contiero, B., Gottardo, F., & Cozzi, G. (2021).** The Welfare of Beef Cattle in the Scientific Literature From 1990 to 2019: A Text Mining Approach. *Frontiers in Veterinary Science*, 7. doi: 10.3389/fvets.2020.588749
- Park, S. R., & Jang, J. Y. (2021).** The Impact of ESG Management on Investment Decision: Institutional Investors' Perceptions of Country-Specific ESG Criteria. *International Journal of Financial Studies*, 9(3), 48.
- Praveen, K., & Mohammad, F. (2022).** Does Accounting-based Financial Performance Value Environmental, Social and Governance (ESG) Disclosures? A detailed note on a corporate sustainability perspective. *Australasian Accounting, Business and Finance Journal*, 16(1), 41–72. doi:10.14453/aabfj.v16i1.4
- Rajic, S., Đorđević, V., Tomasevic, I., & Djekic, I. (2021).** The role of food systems in achieving the sustainable development goals: Environmental perspective. *Business Strategy and the Environment*, 31(3), 988–1001.
- Sabauri, L., & Kvatashidze, N. (2023).** Sustainability Reporting Issues. *Journal of Entrepreneurship and Sustainability Issues*, 11(2), 282–289.
- Sandberg, H., Alnoor, A., & Tiberius, V. (2022).** Environmental, Social, and Governance Ratings and Financial Performance: Evidence from the European Food Industry. *Business Strategy and the Environment*, 32(4), 2471–2489.
- Sinclair, M., Zito, S., & Phillips, C. J. C. (2017).** The Impact of Stakeholders' Roles Within the Livestock Industry on Their Attitudes to Livestock Welfare in Southeast and East Asia. *Animals*, 7(2), 6.
- Stojković, B., Stojanović, B., Davidović, V., Ivetić, A., Simunović, S., Ignjatović, A., & Grujičić, I. (2025).** Effect of chromium propionate supplementation on lactation performance and blood parameters of Simmental cows in mid-lactation under heat stress. *Chilean Journal of Agricultural Research*, 85(2), 268–276. doi: 10.4067/S0718-58392025000200268
- United Nations, (2015).** Transforming our world: The 2030 Agenda for Sustainable Development (A/RES/70/1). United Nations.
- van Wyk, M., & Els, G. (2023).** The Relevance of Integrated Reporting in Future Standard Setting of the International Sustainability Standards Board. *Frontiers in Sustainability*, 4. <https://doi.org/10.3389/frsus.2023.1218985>
- Villiers, C. D., Torre, M. L., & Molinari, M. (2022).** The Global Reporting Initiative's (GRI) Past, Present and Future: Critical Reflections and a Research Agenda on Sustainability Reporting (Standard-Setting). *Pacific Accounting Review*, 34(5), 728–747.
- Yehezkiel, R. Y., Astuti, C. D., & Noor, I. N. (2023).** Gri Standards-Based Sustainability Reporting Disclosure Practices Across Countries. *Media Riset Akuntansi Auditing & Informatika*, 23(2), 241–256.
- Yip, A. W., Yu, W., & Ip, Q. W. (2024).** Motivating small and medium-sized listed companies for better environmental, social and governance (ESG) reporting in Hong Kong. *Public Administration and Policy*, 27(2), 220–234. <https://doi.org/10.1108/pap-05-2024-0068>
- Zdolšek, D., & Beloglavec, S. T. (2023).** The 2023's New and the Fresh: The International Sustainability Disclosure Standards. *International Scientific Conference on Economy, Management and Information Technologies*, 1(1), 205–212. <https://doi.org/10.46793/ICEMIT23.205Z>

Authors info

Stefan Simunović, <https://orcid.org/0000-0002-7249-7891>

Saša Janković, <https://orcid.org/0000-0002-5223-6993>

Borjan Nikola, <https://orcid.org/0000-0003-4067-3755>

Dunja Mišić, <https://orcid.org/0009-0006-2213-2612>

Lukić Mirjana, <https://orcid.org/0009-0001-7749-864X>

Blagoje Stojković, <https://orcid.org/0000-0001-5423-2227>

Sara Simunović, <https://orcid.org/0000-0002-8280-5149>