

## APPLICATION OF ESG GUIDELINES IN THE SUGAR AND ENERGY SECTOR: INTEGRATION BETWEEN GRI AND ABNT PR 2030

### APLICAÇÃO DE DIRETRIZES ESG NO SETOR SUCROENERGÉTICO: INTEGRAÇÃO ENTRE GRI E ABNT PR 2030

### APLICACIÓN DE LAS DIRECTRICES ESG EN EL SECTOR AZUCARERO Y ENERGÉTICO: INTEGRACIÓN ENTRE GRI Y ABNT PR 2030



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#### ABSTRACT

This study analyzes the development of sustainability reports in the sugar-energy sector, based on the integration of the Global Reporting Initiative (GRI) standards and the ABNT PR 2030 guidelines, focusing on the application of environmental, social, and governance (ESG) practices among rural producers of different sizes. The qualitative research was conducted through bibliographic and documentary review, including standards, sustainability reports, and scientific publications. Initially, the study contextualizes the economic relevance of the sugar-energy sector and the increasing demand for transparency and socio-environmental responsibility in agribusiness. It then addresses key concepts such as sustainability, ESG, stakeholders, and materiality, emphasizing the importance of standardization and reliability of information to avoid greenwashing practices. The results present guidelines for the preparation of sustainability reports, including the definition of material topics, the use of performance indicators, and the application of GRI standards. Additionally, a consulting model called SustentaAgro is proposed, aimed at providing technical support for ESG implementation and sustainability reporting, adapted to the different realities of producers. The study concludes that, despite progress in ESG adoption, significant challenges remain, particularly for small producers, mainly due to limited resources and lack of technical capacity, highlighting the need for accessible and context-adapted solutions.

**Keywords:** Sustainability. Materiality. Stakeholders. Governance. Indicators.

#### RESUMO

Este estudo analisa a elaboração de relatórios de sustentabilidade no setor sucroenergético, com base na integração das normas da Global Reporting Initiative (GRI) e das diretrizes da ABNT PR 2030, com foco na aplicação de práticas ambientais, sociais e de governança

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(ESG) em produtores rurais de diferentes portes. A pesquisa, de natureza qualitativa, foi desenvolvida por meio de revisão bibliográfica e documental, contemplando normas, relatórios de sustentabilidade e publicações científicas. Inicialmente, o trabalho contextualiza a relevância econômica do setor sucroenergético e a crescente demanda por transparência e responsabilidade socioambiental no agronegócio. Em seguida, aborda os conceitos de sustentabilidade, ESG, stakeholders e materialidade, destacando a importância da padronização e da confiabilidade das informações para evitar práticas de greenwashing. Como resultados, são apresentadas diretrizes para a elaboração de relatórios de sustentabilidade, incluindo a definição de temas materiais, utilização de indicadores de desempenho e aplicação dos padrões GRI. Além disso, propõe-se um modelo de consultoria, denominado SustentaAgro, voltado ao apoio técnico na implementação de práticas ESG e na elaboração de relatórios, adaptado às diferentes realidades dos produtores. Conclui-se que, apesar dos avanços na adoção do ESG, persistem desafios significativos, principalmente para pequenos produtores, relacionados à limitação de recursos e à falta de capacitação técnica, evidenciando a necessidade de soluções acessíveis e adaptadas ao contexto do setor.

**Palavras-chave:** Sustentabilidade. Materialidade. Stakeholders. Governança. Indicadores.

## RESUMEN

Este estudio analiza la elaboración de informes de sostenibilidad en el sector de la caña de azúcar y el etanol, a partir de la integración de los estándares de la Iniciativa de Informes Globales (GRI) y las directrices ABNT PR 2030, centrándose en la aplicación de prácticas ambientales, sociales y de gobernanza (ASG) en productores rurales de distintos tamaños. La investigación cualitativa se desarrolló mediante una revisión bibliográfica y documental, que abarcó estándares, informes de sostenibilidad y publicaciones científicas. Inicialmente, el trabajo contextualiza la relevancia económica del sector de la caña de azúcar y el etanol y la creciente demanda de transparencia y responsabilidad socioambiental en la agroindustria. Posteriormente, aborda los conceptos de sostenibilidad, ASG, partes interesadas y materialidad, destacando la importancia de la estandarización y la fiabilidad de la información para evitar prácticas de ecoblanqueo. Como resultado, se presentan directrices para la elaboración de informes de sostenibilidad, incluyendo la definición de temas materiales, el uso de indicadores de desempeño y la aplicación de los estándares GRI. Además, se propone un modelo de consultoría, denominado SustentaAgro, orientado a brindar apoyo técnico en la implementación de prácticas ASG y en la elaboración de informes, adaptados a las diferentes realidades de los productores. Se concluye que, a pesar de los avances en la adopción de criterios ESG, persisten desafíos importantes, especialmente para los pequeños productores, relacionados con la limitación de recursos y la falta de capacitación técnica, lo que subraya la necesidad de soluciones accesibles y adaptadas al contexto del sector.

**Palabras clave:** Sostenibilidad. Materialidad. Partes Interesadas. Gobernanza. Indicadores.

## 1 INTRODUCTION

The cultivation of sugarcane has high economic relevance in the Brazilian context, positioning the country as the world's largest producer of this commodity. National production is predominantly concentrated in the Southeast region, with emphasis on the state of São Paulo, which brings together approximately 350 thousand rural producers operating in different segments of the production chain. This sector makes a significant contribution to the Gross Domestic Product (GDP), in addition to playing a significant role in job creation, exports, and the supply of food and energy, configuring itself as strategic for the national economy (Conab, 2025; Government of the State of São Paulo, 2023).

In recent decades, the concept of sustainability has been widely debated in the business, academic, and government spheres, with the purpose of promoting economic development in line with the conservation of natural resources. Such an approach presupposes the integration of the environmental, social, and governance dimensions, based on ethical and transparent practices that contribute to strengthening stakeholder trust and mitigating associated risks, such as greenwashing (França, 2024; Nascimento, 2022).

In this scenario, the concept of ESG (Environmental, Social, and Governance) emerges as a structuring model for the incorporation of sustainability in organizations, aligning with the Sustainable Development Goals (SDGs) and current international guidelines (Global Compact, 2025). However, the implementation of these practices in the agricultural sector still faces significant challenges, especially with regard to small producers, who often deal with limitations related to access to technology, information, and credit (Garcia, 2024).

The intensification of demands for transparency and socio-environmental responsibility has driven the adoption of sustainability reports as instruments for communicating organizational impacts and strengthening institutional credibility. In this context, the guidelines of the Global Reporting Initiative (GRI), widely recognized in the international scenario, stand out, as well as ABNT PR 2030, which adapts ESG principles to the specificities of the Brazilian context (Pineiro, 2023; Daub, 2007).

In view of the above, the present study aims to analyze and propose guidelines for the preparation of sustainability reports in the sugar-energy sector, considering the integration between the GRI standards and ABNT PR 2030, with emphasis on applicability for rural producers of different sizes. As specific objectives, it seeks to: (i) evaluate the applicability of these standards for small, medium and large producers; and (ii) propose a consulting model aimed at the implementation of ESG practices and the preparation of sustainability reports.

## 2 LITERATURE REVIEW

The demand for sustainable practices in the sugar-energy sector has shown significant growth, although there is still a predominance of studies focused on economic and productive aspects, to the detriment of social and governance dimensions. In this context, sustainability reports are relevant instruments for the evaluation and communication of organizational performance, although, in many cases, they remain focused on environmental and economic impacts (Silva, 2022).

The incorporation of ESG practices in agribusiness has gained prominence due to the need to reconcile productivity and sustainability, especially in the face of challenges such as deforestation and the growing demand for food. The adoption of these practices contributes to strengthening the resilience of production systems and promoting sustainability in the sector (Senar, 2023; Medeiros, 2023).

However, the implementation of ESG faces limitations related to the level of technical knowledge, access to resources, and the structural characteristics of rural producers, especially small-sized ones (Andrade, 2022). In this sense, the need for clear, standardized, and adaptable guidelines to the reality of the agricultural sector is evident.

ABNT PR 2030 is a recommended practice that guides Brazilian organizations in the adoption of sustainable practices, structuring ESG based on three main axes: environmental, social, and governance. This standard aims to reduce ambiguities and promote greater consistency in the application of ESG principles in the national context (ABNT, 2022).

In addition, the Global Reporting Initiative (GRI) establishes internationally recognized standards for the preparation of sustainability reports, enabling greater transparency, comparability, and credibility of the information disclosed. The adoption of these guidelines contributes to risk management, the strengthening of relationships with stakeholders, and the definition of strategic indicators (Global Reporting Initiative, 2025).

Sustainability reports play a central role in organizational communication, by highlighting the results and impacts of ESG practices, in addition to contributing to attracting investments and strengthening institutional reputation. However, the occurrence of greenwashing practices constitutes a relevant challenge, reinforcing the need for standardization and verification of the information disclosed (Albuquerque, 2023; Vieira, 2024).

In this context, stakeholders play a fundamental role in defining ESG strategies, influencing the identification of material topics and the prioritization of organizational actions. Continuous dialogue with these stakeholders enables greater alignment between the practices adopted and market expectations (Indriunas, 2023; Resende, 2024).

### 3 METHODOLOGY

The present study is characterized as a qualitative research, developed through a bibliographic and documentary review, based on scientific productions, institutional publications and sustainability reports related to the ESG theme in the agricultural sector.

The guidelines established by ABNT PR 2030 and the standards of the Global Reporting Initiative (GRI) were specifically analyzed, considering their applicability in the context of rural producers inserted in the sugarcane production chain. In addition, sustainability reports made available on institutional platforms of public access were examined, in order to understand practices already adopted in the sector.

The data analysis was conducted under an interpretative qualitative approach, aiming to understand the application of ESG practices and identify the main challenges and opportunities associated with their implementation. The literature review assumed an explanatory character, seeking to identify determining factors for the adoption of these practices in the agricultural sector (Gil, 2008; Manzo, 1971).

Based on this analysis, a support structure for the implementation of ESG was proposed, including the preparation of sustainability reports and the development of a consulting model based on the Business Model Canvas, aimed at the technical support of rural producers.

### 4 RESULTS

#### 4.1 STRUCTURE FOR THE PREPARATION OF SUSTAINABILITY REPORTS

Sustainability reports represent an essential strategic instrument for organizational communication, allowing the systematized dissemination of practices, indicators, and results related to the environmental, social, and governance (ESG) dimensions. In the sugar-energy sector, these reports play an even more relevant role, considering the growing pressure for transparency and socio-environmental responsibility in agribusiness (Avila, 2023).

The structure of these reports, as established by the Global Reporting Initiative (GRI) guidelines, is based on the application of fundamental reporting principles, such as accuracy, balance, clarity, comparability, completeness, context of sustainability, timeliness, and verifiability. These principles guide not only the organization of information, but also ensure the consistency and reliability of the data presented (Global Reporting Initiative, 2021).

In the context of the sugar-energy sector, the specificity of the presentation of data by agricultural harvest is highlighted, which requires the maintenance of consistent methodologies over time. Comparability between production periods allows for the identification of variations in indicators, evaluation of the performance of the practices adopted, and establishment of more

assertive goals. This aspect reinforces the need for standardization in data collection and analysis, ensuring the continuity and reliability of the information reported.

The analysis of real reports, such as the one by São Martinho (2024), shows that the structure for the disclosure of general content (GRI 2) includes elements such as the identification of the organization, activities developed, value chain, governance, policies, and relationship with stakeholders. However, relevant gaps are observed in certain topics, such as the absence of details on governance appointment processes, remuneration policies, conflicts of interest, and performance evaluation of governing bodies, which compromises the completeness and transparency of information (São Martinho, 2024).

These results indicate that, although there is partial adherence to the standards, there are still challenges in the full implementation of the GRI requirements, especially with regard to the depth and quality of the information disclosed.

#### 4.2 MATERIAL THEMES AND MATERIALITY MATRIX

The definition of material topics constitutes the central axis of the preparation of sustainability reports, as it guides organizational strategies and the prioritization of ESG actions. The identification of these topics must consider both the impacts generated by the organization and the expectations of stakeholders, reflecting the logic of double materiality (Global Reporting Initiative, 2021).

The use of the materiality matrix allows the topics to be classified according to their relevance to the company and stakeholders, organizing them into different levels of priority. The topics classified as high priority, such as climate change, greenhouse gas emissions, corporate governance, diversity and inclusion, human rights, and data privacy, represent those that require immediate and strategic action, and are directly incorporated into organizational planning (Global Reporting Initiative, 2021; Senar, 2023).

Medium-priority topics, such as water use, energy efficiency, waste management, organizational culture, and stakeholder engagement, require continuous monitoring and progressive improvement actions, while low-priority topics must be monitored, ensuring compliance with current legislation and standards (Brazilian Association of Technical Standards, 2022).

The analysis of the tables presented in the study shows a consistent ESG planning structure, including the definition of strategic objectives (OKRs) and performance indicators (KPIs) associated with each material topic. However, there is a need to improve this structure to fully comply with the guidelines of GRI 3: 2021, especially with regard to the explanation of

the methodological process for identifying and prioritizing the topics, as well as the inclusion of information on those responsible, monitoring periodicity, and data sources.

In addition, it is recommended to incorporate impact assessment criteria, such as scale, severity, and probability, allowing for a more robust analysis in line with regulatory requirements. These elements contribute to strengthening the methodological consistency and credibility of the sustainability report.

#### 4.3 MANAGEMENT OF MATERIAL TOPICS AND USE OF INDICATORS

The management of material topics requires the definition of clear and measurable strategies, and the use of methodologies such as OKRs (Objectives and Key Results) associated with KPIs (Key Performance Indicators) is recommended. This approach allows the alignment of the organization's strategic objectives with operational indicators, facilitating the monitoring of ESG performance.

In high-priority themes, indicators are used to monitor critical aspects such as emissions reduction, energy efficiency, governance, and social inclusion. These indicators should be accompanied by specific targets, allowing progress to be assessed over time and guiding decision-making.

In medium-priority topics, indicators have a management and monitoring function, enabling continuous adjustments in organizational practices. In low-priority topics, indicators are used mainly for monitoring, ensuring that legal requirements are met, even if these topics are not strategic at the moment.

The adoption of this differentiated monitoring structure allows for a more efficient allocation of resources, directing efforts to the topics of greatest relevance and impact, without neglecting the other aspects of sustainability.

#### 4.4 APPLICATION OF GRI STANDARDS AND TRANSPARENCY OF INFORMATION

The application of the Global Reporting Initiative (GRI) standards contributes significantly to the standardization of sustainability reporting, allowing greater comparability between organizations and strengthening the credibility of the information disclosed (Global Reporting Initiative, 2016; Global Reporting Initiative, 2021).

The GRI standards are structured into three main categories: universal, sectoral, and thematic. This framework enables a comprehensive approach to sustainability, allowing organizations to tailor reporting to their operational specificities.

Among the thematic standards, GRI 305 – Emissions stands out, which guides the disclosure of information related to greenhouse gases, including mitigation, compensation and monitoring strategies. The application of this standard is particularly relevant in the sugar-energy sector, due to its direct relationship with climate change (Global Reporting Initiative, 2016).

Transparency of information also involves the proper management of omissions, which must be justified in accordance with the criteria established by the GRI. The clear presentation of omissions, accompanied by justifications, contributes to the credibility of the report and demonstrates a commitment to transparency (Global Reporting Initiative, 2021).

In addition, the inclusion of the GRI content index and the statement of use of the standards makes it possible to organize the information and evidence the level of compliance of the report. Notification to the GRI about the use of the standards reinforces the legitimacy of the reporting process and evidences alignment with international standards.

#### 4.5 ESG CONSULTING MODEL PROPOSAL

As a result of the analysis carried out, the creation of SustentaAgro Consultoria was proposed, a business model aimed at technical support in the implementation of ESG practices and in the preparation of sustainability reports in the sugar-energy sector.

The proposal considers the different realities of rural producers, offering solutions adapted to the size and needs of each audience. For small producers, simplified packages are suggested, with a focus on ESG compliance and basic training. For medium and large properties, as well as mills, more complete solutions are proposed, including audits, detailed reporting, and integration of ESG practices into corporate governance.

The model also includes the use of measurable ESG performance indicators, allowing continuous monitoring of the practices adopted. The proposal also includes the development of an interactive digital platform, with dashboards for monitoring indicators, automated generation of reports, and availability of educational content.

The hybrid service, combining remote support and technical visits, allows for greater proximity to producers and customization of solutions. In addition, the model provides for the formation of strategic partnerships with institutions and companies related to sustainability, as well as the use of the Business Model Canvas as a tool for structuring the business (Osterwalder; Pigneur, 2010).

In general, the results indicate that the consultancy's proposal has the potential to contribute to the dissemination of ESG practices in the sugar-energy sector, especially by offering accessible solutions adapted to the limitations faced by rural producers.

## 5 DISCUSSION OF THE RESULTS

### 5.1 IMPLEMENTATION OF ESG IN THE SUGAR-ENERGY SECTOR

The implementation of ESG practices in the sugar-energy sector is a complex process, which requires not only the adoption of normative guidelines, but also the adaptation of these practices to the productive and structural specificities of the sector. The analysis of the results demonstrates that the identification of material issues constitutes the basis for this implementation, being essential to guide the decision-making and strategic planning of organizations (Senar, 2023).

In this context, the use of ABNT PR 2030 as an initial reference presents itself as an appropriate approach to the Brazilian scenario, since this standard considers the particularities of the agricultural sector and allows for a gradual adaptation of ESG practices. On the other hand, the GRI offers a consolidated international standard, aimed at the standardization and communication of sustainability reports, evidencing the complementarity between both guidelines (Brazilian Association of Technical Standards, 2022; Global Reporting Initiative, 2022).

The integrated analysis of these standards shows that the implementation of ESG should not be treated as an isolated or one-off process, but rather as a continuous system, which involves diagnosis, planning, execution, and monitoring. This understanding reinforces the need to structure ESG as part of the organizational strategy, and not just as a compliance requirement.

### 5.2 INTEGRATION BETWEEN NORMS AND APPLICABILITY IN THE PRODUCTIVE CONTEXT

The results indicate that the integration between the GRI and ABNT PR 2030 standards allows for a more comprehensive and structured approach to sustainability, making it possible to align international standards with local conditions. This integration contributes to reducing the complexity of ESG implementation, especially by allowing producers to start their practices based on ABNT PR 2030 and progressively evolve towards the adoption of GRI standards.

However, it is observed that the applicability of these standards varies according to the size of the rural producer. While large organizations have a greater capacity to adapt, due to

access to resources, technology, and specialized teams, small producers face limitations that make it difficult to fully implement these guidelines (Garcia, 2024; Andrade, 2022).

This difference shows that the standardization proposed by the standards, although essential for comparability and transparency, can represent an operational challenge for producers with less technical and financial capacity. Thus, it is necessary to develop strategies that reconcile standardization with flexibility, allowing the adaptation of ESG practices to different production realities.

### 5.3 ROLE OF STAKEHOLDERS IN THE CONSTRUCTION OF ESG STRATEGIES

The analysis of the results shows that stakeholders play a central role in the construction of ESG strategies, directly influencing the definition and prioritization of material topics. The active participation of these actors, through mechanisms such as interviews, questionnaires, and structured dialogues, allows organizational practices to be aligned with social and market expectations (Global Reporting Initiative, 2021; Corrêa, 2024).

In addition, interaction with stakeholders contributes to the identification of risks and opportunities associated with productive activities, enabling a more efficient and strategic management of sustainability. This process also favors the construction of organizational legitimacy, as it demonstrates transparency and commitment to the demands of stakeholders (Indriunas, 2023).

However, the effectiveness of this engagement depends on the ability of organizations to establish adequate and accessible communication channels, which can represent an additional challenge for small producers, who do not always have formal relationship structures with stakeholders.

### 5.4 USE OF INDICATORS AND STRATEGIC PLANNING

The definition of ESG indicators, associated with the use of methodologies such as OKRs and KPIs, is a fundamental element for the operationalization of sustainability strategies. The analysis of the results demonstrates that the use of these instruments allows transforming abstract concepts into measurable metrics, facilitating performance monitoring and decision-making.

The materiality matrix plays a central role in this process, by allowing the prioritization of the most relevant topics and guiding the definition of strategic indicators. This approach contributes to a more efficient allocation of resources, directing efforts to the topics with the greatest impact.

However, it is observed that the definition and monitoring of these indicators require technical knowledge and access to structured data, which may limit their application in smaller rural properties. This scenario reinforces the need to simplify methodologies and specialized technical support, in order to enable the implementation of ESG in a broader and more inclusive way.

## 5.5 TRANSPARENCY, STANDARDIZATION, AND GREENWASHING RISKS

Information transparency emerges as one of the main pillars of sustainability, and is essential to ensure the credibility of reports and the trust of stakeholders. The adoption of GRI standards contributes to the standardization of information, reducing informational asymmetry and allowing greater comparability between organizations (Global Reporting Initiative, 2021).

However, the analysis of the results shows that the absence of standardization and incomplete disclosure of information can favor greenwashing practices, compromising the integrity of reports and the reputation of organizations. In this sense, the use of standards and certifications becomes essential to ensure the veracity of information and strengthen transparency (Vieira, 2024).

In addition, the obligation to justify omissions and the inclusion of elements such as the GRI content index and the declaration of use of the standards contribute to increasing the traceability of information and reducing risks of distortion in the communication of ESG practices.

## 5.6 FEASIBILITY AND CONTRIBUTION OF THE PROPOSED CONSULTING MODEL

SustentaAgro Consultoria's proposal arises as a response to the challenges identified in the implementation of ESG in the sugar-energy sector, especially with regard to the limitations faced by small and medium-sized producers. The analysis of the results indicates that the offer of specialized technical support can contribute significantly to the dissemination of ESG practices, making them more accessible and adapted to the reality of the sector.

The proposed model, by integrating tools such as performance indicators, digital platform and hybrid service, has the potential to facilitate the implementation of ESG practices and the preparation of sustainability reports. In addition, the segmentation of services according to the size of the producer allows to meet different levels of maturity and operational capacity.

Another relevant aspect refers to the possibility of integration between sustainability and production efficiency, showing that the adoption of ESG can generate benefits not only environmental and social, but also economic, contributing to the competitiveness of the sector.

Overall, the consultancy's proposal represents a viable alternative to overcome the barriers identified, promoting greater inclusion and strengthening the adoption of ESG practices in the sugar-energy sector.

## 6 CONCLUSION

The present study aimed to analyze the preparation of sustainability reports in the sugar-energy sector, based on the integration of the Global Reporting Initiative (GRI) standards and the ABNT PR 2030 guidelines, considering their applicability for rural producers of different sizes. From the literature and documentary review carried out, it was possible to understand that the adoption of ESG practices has been consolidated as a strategic element in agribusiness, especially in the face of the growing demand for transparency, socio-environmental responsibility and competitiveness in the market.

The results showed that the use of structured normative guidelines contributes to the standardization of sustainability reports, promoting greater reliability, comparability, and clarity of the information disclosed. In this context, GRI stands out as an international reference for reporting, while ABNT PR 2030 presents greater adherence to the Brazilian context, enabling a more accessible adaptation to the realities of the agricultural sector. The integration between these standards proved to be complementary, allowing for a progressive and structured approach to the implementation of ESG.

However, the analysis also highlighted the existence of significant challenges in the application of these practices, especially for small and medium-sized rural producers. Limitations related to access to financial resources, technology, information, and technical training hinder the full implementation of ESG guidelines, which can increase inequalities in the sector. This scenario reinforces the need for adapted solutions, capable of making sustainability more accessible and viable for different producer profiles.

Another relevant aspect refers to the importance of defining material topics and stakeholder engagement as central elements in the construction of ESG strategies. The use of tools such as the materiality matrix and the adoption of performance indicators allow for directing organizational actions, making the implementation process more structured and results-oriented. However, the effectiveness of these tools depends on the technical capacity of organizations, again highlighting the need for specialized support.

In this sense, SustentaAgro Consultoria's proposal is a relevant contribution to the study, by presenting a technical support model aimed at the implementation of ESG practices and the preparation of sustainability reports in the sugar-energy sector. The proposal seeks to meet the

different realities of producers, offering adapted solutions and promoting greater inclusion in the sustainable development process. In addition, the potential for integration between sustainability and production efficiency is highlighted, showing that the adoption of ESG can contribute to the generation of economic, social and environmental value.

In general, it is concluded that the integration between the GRI and ABNT PR 2030 standards represents a viable and strategic approach to the preparation of sustainability reports in the sugar-energy sector, contributing to the strengthening of transparency and governance in agribusiness. However, for this implementation to be effective and comprehensive, it is essential to consider the specificities of the sector and develop support mechanisms that enable the adoption of ESG practices by producers of different sizes.

Finally, it is recommended that future research advance in the empirical validation of the proposed model, through practical application in rural properties, as well as in the analysis of the economic feasibility of ESG practices. Such studies can contribute to broadening the understanding of the impacts of sustainability in the sugar-energy sector and strengthen its implementation in a more efficient and inclusive way.

## REFERENCES

- Albuquerque DE melo, L. S., & nóbrega barbosa, M. de F. (2023). Análise dos ODS divulgados nos relatórios de sustentabilidade das empresas com alto potencial poluidor, integrantes do setor de petróleo, gás e biocombustível da B3. *REUNIR: Revista de Administração Contabilidade e Sustentabilidade*, 13(1), 77–94. <https://doi.org/10.18696/reunir.v13i1.1556>
- Andrade, L. F., & ferraz almeida, R. (2022). Perfil dos produtores da agricultura familiar e uso dos critérios de Environmental, Social and Governance (ESG) na Região Baixo Sul, Bahia. *Revista Extensão & Cidadania*, 10(18), 5–23. <https://doi.org/10.22481/recuesb.v10i18.10468>
- Associação brasileira DE normas técnicas. (2022). ABNT PR 2030: Ambiental, social e governança (ESG) — Conceitos, diretrizes e modelo de avaliação e direcionamento para organizações.
- Ávila, R. (2023). Relatório de sustentabilidade. *Sustentabilidade Agora*. <https://sustentabilidadeagora.com.br/relatorio-de-sustentabilidade/>
- CONAB — Companhia Nacional de Abastecimento. (2025). Acompanhamento da safra brasileira de cana-de-açúcar: v. 13, n. 2, 2º levantamento, safra 2025/26. [https://www.gov.br/conab/pt-br/atuacao/informacoes-agropecuarias/safras/safra-de-cana-de-acucar/arquivos-boletins/2o-levantamento-safra-2025-26/e-book\\_boletim-de-safras-cana\\_2o-lev-2025.pdf](https://www.gov.br/conab/pt-br/atuacao/informacoes-agropecuarias/safras/safra-de-cana-de-acucar/arquivos-boletins/2o-levantamento-safra-2025-26/e-book_boletim-de-safras-cana_2o-lev-2025.pdf)
- Corrêa, N. S. R., azevedo, D. B. de, santos, J. A. dos, oliveira, V. S. de, malafaia, G. C., vilalba, A. C. de C., santos, L. M. C. dos, & anastácio, T. de O. (2024). O diálogo entre stakeholders

voltado para a análise dos objetivos de desenvolvimento sustentável. Cuadernos de Educación y Desarrollo, 16(5), e4234. <https://doi.org/10.55905/cuadv16n5-070>

Daub, C.-H. (2007). Assessing the quality of sustainability reporting: An alternative methodological approach. *Journal of Cleaner Production*, 15, 75–85. <https://doi.org/10.1016/j.jclepro.2005.08.013>

França, G. E. de, SILVA, H. de F. N., & MENDONÇA, A. T. B. B. (2024). A sustentabilidade na era da informação e do conhecimento: Uma revisão sistemática da literatura. *RDBCI: Revista Digital de Biblioteconomia e Ciência da Informação*, 22, e024005.

Garcia, R. M. (2024). O “E” do ESG e o pequeno produtor rural: Uma análise jurídico-econômica dos custos de transação (Dissertação de mestrado). Universidade de São Paulo.

Gil, A. C. (2008). *Método e técnica de pesquisa social* (6ª ed.). Atlas.

Governo do Estado de São Paulo. (2023, março 20). Agricultura paulista apresenta resultados expressivos com relação ao ano de 2022. <https://agricultura.sp.gov.br/b/agricultura-paulista-apresenta-resultados-expressivos-com-relacao-ao-ano-de-2022>

Global reporting initiative. (2021). GRI 1: Fundamentos 2021. <https://www.globalreporting.org/standards>

Global reporting initiative. (2021). GRI 2: Divulgações gerais 2021. <https://www.globalreporting.org/standards/gri-standards-download-center/>

Global reporting initiative. (2021). GRI 3: Temas materiais 2021. <https://www.globalreporting.org/standards/gri-standards-download-center/>

Global reporting initiative. (2022). GRI 13: Agriculture, aquaculture and fishing sectors 2022. <https://www.globalreporting.org/standards/gri-standards-download-center/>

Global reporting initiative. (2016). GRI 305: Emissões 2016. <https://www.globalreporting.org/standards/gri-standards-download-center/gri-305-emissions-2016/>

Global reporting initiative. (n.d.). <https://www.globalreporting.org/>

Indriunas, L. (2023). *Diversidade, ESG e relacionamento com stakeholders*. Editora Senac São Paulo.

Manzo, A. J. (1971). *Manual para la preparación de monografías: Una guía para presentar informes y tesis*. Humanistas.

Medeiros, P. A. de P. (2023). ESG e agronegócio brasileiro: Relação nas cadeias de produção agrícola, competitividade e impactos de instabilidades econômico-políticas mundiais. *Revista USP*, 9(3), 239–274.

Nascimento, H. C. M. do, & oliveira, H. V. de. (2022). Gestão do conhecimento e sustentabilidade: Das abordagens conceituais à implementação como estratégia nas organizações. *BIBLOS*, 36(2). <https://doi.org/10.14295/biblos.v36i2.12610>

Osterwalder, A., & pigneur, Y. (2010). Business model generation. John Wiley & Sons.

Pacto global. (n.d.). ESG. <https://www.pactoglobal.org.br/esg/>

Pinheiro, G. R., & arantes, V. A. (2023). Estudo dos relatos de sustentabilidade 2022 das principais concessionárias de rodovias. Fatec Jundiaí.

Resende, K. C., grecco, M. C. P., & antunes, M. T. P. (2024). Percepção de stakeholders brasileiros sobre a normatização ESG. In Actas del XXI Encuentro Internacional AECA.

São martinho S.A. (2025). Relatório anual de sustentabilidade 2023/24. <https://www.saomartinho.com.br/ListRelatorio.aspx?idCanal=E/5CI5hbGiTfjZ7mhu2y5w==&linguagem=pt>

SENAR. (2023, maio 4). Práticas ESG no meio rural. <https://ead.senar.org.br/cursos/praticas-esg-no-meio-rural>

Silva, G. M. C. D. E., & périco, A. E. (2022). Eficiência e sustentabilidade: Uma análise econômica, social, ambiental e sustentável das usinas paulistas de cana-de-açúcar. Revista de Economia e Sociologia Rural, 60(3), e238512.

Vieira, R. B. F., de carvalho filho, Á. M., imbiriba, K. G., & marques, I. W. de A. (2024). Greenwashing no contexto global: Uma revisão sistemática e análise das práticas corporativas sustentáveis. ARACÊ, 6(4), 15182–15202. <https://doi.org/10.56238/arev6n4-245>