RCMOS - Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

From waste management to corporate reputation: a multistakeholder analysis of ESG practices in a clinical laboratory in Ceará.

From waste management to corporate reputation: a multistakeholder analysis of ESG practices in a clinical laboratory in Ceará, Brazil

Munique de Aguiar Lima Soares – Luciano Feijão Faculty
muniquelimasing@gmail.com

Maria do Socorro Silva Mesquita – Luciano Feijão College
maria.mesquista@flucianofeijao.com.br

Raimundo Pedro Justino de Orlanda – Luciano Feijão Faculty
pedro.orlanda@flucianofeijao.com.br

Summary

The increasing regulatory and social pressure for environmental, social, and governance (ESG) practices has required clinical laboratories to review their processes, especially due to the high generation of chemical and biological waste. In the interior of Ceará, the Sobral Clinical Laboratory (Lacliso) seeks to align its operations with the Triple Bottom Line (TBL) paradigm. This study aims to evaluate how Lacliso's sustainable initiatives, structured around the economic, environmental, and social pillars of the TBL, impact the perception of its main stakeholders (employees, clients, suppliers, and the community). This is a qualitative, descriptive-analytical study. Textual data were subjected to categorical content analysis, according to Bardin, while waste indicators were treated using simple descriptive statistics. The findings highlight the presence of the three dimensions of TBL: in the environmental pillar, there was an increase in waste collection of 569.3 kg and the destination of 3,253.1 kg of recyclable materials to local cooperatives between 2022 and 2024; in the social pillar, 83% of employees reported adopting household waste separation practices; in the economic pillar, the substitution of cleaning supplies generated savings for the company. Among clients, 60% stated that the socio-environmental commitment positively influenced their choice of service. It is recommended to consolidate a governance system with auditable ESG goals, expand the supplier sample, and incorporate complete financial metrics in order to strengthen future impact analyses.

Keywords: corporate sustainability; Triple Bottom Line; clinical laboratory; waste management; stakeholders.

ABSTRACT

Growing regulatory and social pressure for environmental, social and governance (ESG) practices has required clinical laboratories to review their processes, particularly due to the high generation of chemical and biological waste. In the interior of Ceará, the Sobral Clinical Laboratory (Lacliso) seeks to align its operations with the Triple Bottom Line (TBL) paradigm. This study aims to assess how Lacliso's sustainable initiatives, structured around the economic, environmental and social pillars of the TBL, affect the perceptions of its main stakeholders (employees, clients, suppliers and the community). This is a qualitative, descriptive-analytical study. Textual data were examined using Bardin's categorical content analysis, while waste indicators were treated using simple descriptive statistics. The findings indicate the presence of the three TBL dimensions: in the environmental pillar, waste collection increased by 569.3 kg and 3,253.1 kg of recyclable materials were allocated to local cooperatives between 2022 and 2024; in the social pillar, 83% of employees reported adopting household waste separation practices; in the economic pillar, the replacement of cleaning inputs generated savings for the company. Among clients, 60% stated that socio-environmental commitment positively influenced their choice of service. It is recommended to consolidate a governance system with auditable ESG targets, expand the supplier sample, and incorporate complete financial metrics in order to strengthen future impact assessments.

Keywords: corporate sustainability; Triple Bottom Line; clinical laboratory; waste management;

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025
stakeholders.

1. Introduction

Over the last three decades, the publication of the *Our Common Future* report by Brundtland (1991) and the proposition of the *Triple Bottom Line* concept by Elkington (1997) contributed to Redefining societal expectations regarding organizational performance. Business evaluation, previously focused on financial indicators, it has come to incorporate the reduction of environmental impacts and... The generation of social value is a relevant dimension. In the diagnostic services sector, this demand... This becomes more sensitive, since clinical laboratories use significant volumes of water. They consume disposable energy and supplies, in addition to generating chemical and biological waste that requires... specialized treatment.

The intensification of raw material extraction and the inadequate disposal of waste have have been associated with instances of environmental degradation, increasing social pressure on companies Adopt preventative and preservation practices. In this context, the role of stakeholders is strengthened. paying attention to the origin of products, production processes, and the final destination of materials. Thus, Terms such as sustainable development, ESG, and *Triple Bottom Line* are becoming consolidated in the debate , which The spread of this concept, starting in the 1990s, is linked to the formulation of the Sustainable Development Goals. Designated sustainable by the United Nations.

Sustainable development was systematized in the report *Our Common Future,* in which Brundtland (1991, p. 1) defines it as “development that meets the needs of the present.” without compromising the ability of future generations to meet their own needs.” This formulation emphasizes the need to reconcile long-term organizational growth with preservation of natural resources.

Mazzioni et al. (2023) indicate that engagement with the SDGs tends to have repercussions on Corporate reputation. As capitalism becomes increasingly oriented towards... Stakeholders, incorporating SDG targets into business strategies can operate as evidence of commitment to mitigating negative impacts and promoting well-being social.

In 2004, according to the text's description, the World Bank, the UN Global Compact and Financial institutions from different countries have formally introduced the term ESG, reinforcing Guidelines for environmental, social, and governance responsibility in organizations. These guidelines are associated with increased transparency and the appreciation of sustainable practices by investors and consumers (Exame Magazine, 2021).

Among the conceptual frameworks used, the *Triple Bottom Line* occupies a central position: Elkington (1997) proposes that business performance be analyzed in an integrated way from

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

three pillars — environmental, social, and economic — often summarized as planet, people and profit.

Given this scenario, the research is organized around the following guiding question: In what way do sustainability practices at the Sobral Clinical Laboratory impact its... stakeholders? The objective of the study is to evaluate how sustainable initiatives structured around the pillars The economic, environmental, and social aspects of the *Triple Bottom Line* are reflected in stakeholder perception. considered central, including employees, customers, suppliers and the community.

Finally, the discussion about environmental responsibility throughout the value chain is... presented as a requirement in the context of global climate change. In this sense, organizations that adopt proactive stances tend to mitigate risks and add value to... business, considering the growing presence of the topic in national and international debates.

2. Theoretical Framework

2.1 The evolution of the concept of sustainability

2.1.1 From the Brundtland Report to the 2030 Agenda

The concept of sustainable development, consolidated in the report *Our Common Future* (Brundtland Commission, 1987), emphasizes the need to use natural resources in a way that to guarantee its availability to future generations (Brundtland, 1991). From this perspective, the Development is no longer understood solely as economic expansion and now requires... Intergenerational commitment, with ecological limits and collective responsibility.

According to Lourdes et al. (2010), sustainability relates to the sense of "sustaining", incorporating a long-term logic and the construction of interaction mechanisms in societies human activities that foster a more harmonious relationship with nature. This understanding broadens the The debate acknowledges that sustainability is not limited to the environmental dimension, but involves other forms of sustainability. of social organization, consumption patterns and production models.

Faced with a scenario of increasingly complex regulations and greater demand for With business positions aligned with sustainability, organizations have begun to adapt their practices and strategies, responding to regulatory pressures and market expectations (Oliveira, (Santos and Magalhães, 2019). In this process, an intensification of the debate and consolidation was observed. of integrated approaches, among which the ESG (Environmental, Social and Governance) agenda stands out. Governance). For Costa et al. (2022), the adoption of ESG expands the possibility of implementation. an articulated set of social, environmental, and governance programs, constituting a relevant factor in Organizational improvement for companies committed to social and environmental practices.

For organizational goals to be pursued sustainably, it becomes Convergence between institutional practices and global development frameworks is necessary. In this sense, alignment with the Sustainable Development Goals (SDGs) guidelines is a

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

A movement consistent with the international agenda. The SDGs, approved in 2015, embody these goals.
associated with the main global political and institutional framework linked to development,
known as Agenda 2030 (Alves and Fernandes, 2020).

2.1.2 Conceptualization and types of waste in diagnostic services

In the context of clinical laboratories, the National Solid Waste Policy, established
Law No. 12.305/2010 establishes guidelines for the proper management and disposal of waste.
including those generated by health services, whose regulation involves bodies linked to
Sisnama and SNVS (Brazil, 2010). Sisnama (National Environmental System), through
The National Council for the Environment (Conama) is responsible for establishing standards and guidelines.
environmental guidelines, providing guidance on protection and control parameters.

Ibama (Brazilian Institute of Environment and Renewable Natural Resources), as
The executive body of Conama describes healthcare waste as materials that may contain
biological agents with characteristics of greater virulence or concentration, capable of presenting
risk of infection (Ibama, 2012). These residues, commonly associated with "hospital waste",
They require specific management, given the sanitary and environmental implications.

With regard to solid waste, Ibama defines it as all material, substance,
An object or discarded item resulting from human activities in society, whose final destination is
carried out, proposed or mandatory, encompassing solid and semi-solid states, as well as contained gases
in containers and liquids that, due to their particular characteristics, require technical solutions or
economically unviable for discharge into public sewage systems or bodies of water,
considering the best available technology (Ibama, 2012).

CONAMA Resolution No. 358/2005 guides environmental protection through the management of
waste and establishes its classification into groups A, B, C, D, and E. Group A includes waste
Infectious and biological waste; group B includes chemical waste, such as hormonal products and
sanitizing products; group C refers to radioactive materials; group D includes waste without biological risk.
chemical or radiological waste (common waste); and group E comprises sharps, such as needles and
scalpels.

2.2 The Triple Bottom Line (TBL) as a framework for sustainable performance

2.2.1 Definition and origin of TBL

Contemporary business practices demand that the supply of products and services not be limited.
restrict the focus to profit, also incorporating social and environmental commitments, in accordance with
with the so-called "three pillars of sustainability." This approach has gained visibility in the field.
organizational based on the formulation of the Triple Bottom Line (TBL), proposed by Elkington (2004),
by guiding the evaluation of business performance through three integrated pillars: economic (profit),

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

environmental (planet) and social (people).

Santos et al. (2024) explain that TBL contributes to classifying sustainable actions and to understand that sustainability involves multiple actors and sectors, going beyond a single interpretation. limited to environmental preservation and requiring a systemic approach, with implications for strategies, governance and relationships with different audiences.

2.2.2 Pillars of TBL

Elkington (2000), cited in Baldissera and Kaufmann (2013), defines the economic pillar as relating to financial results, including physical and financial capital, as well as human capital, intellectual, natural, and social. The environmental pillar focuses on eco-efficiency, seeking to offer goods and Providing services in a competitive manner, meeting human needs and improving quality of life. while reducing ecological impacts and resource use throughout the life cycle.
The social pillar, in turn, refers to the well-being of people and communities related to... organizations, involving the reduction of inequalities, respect and social engagement.

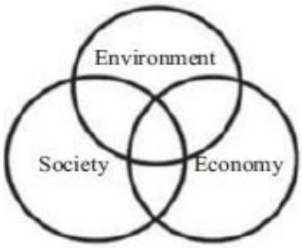
When examining the pillars of TBL, it is observed that the economic aspect seeks viability and attractiveness. for investors; the environmental aspect guides interaction with the environment, minimizing damage; and the social aspect focuses actions with stakeholders, such as society, employees and partners, recognizing the dimension relational sustainability (Oliveira et al., 2012).

2.2.3 The intersection of the pillars and true sustainability

Sustainability is not limited to the environmental domain, as it integrates social and... economic. Thus, companies have sought sustainable development both to reduce environmental impacts as well as promoting improvements in other spheres. Venturini (2015, p. 3) argues that sustainable development strategies imply a discussion of a model that Combine economic promotion with environmental preservation and conservation, as well as social participation.

The following diagram represents the three pillars joined together and with equal balance. Relevance to achieving organizational sustainability:

Figure 1: The three pillars of sustainability (social, environmental, and economic)



Source: Arya, Srivastava and Jaiswal (2019)

According to Arya, Srivastava and Jaiswal (2019), the organization achieves the “true "Sustainability" by assigning simultaneous importance to the three pillars in its operations, considering the area of intersection between them. This concept converges with Carter and Rogers (2008), when they state

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

Effective sustainability occurs at the intersection of environmental, social, and economic dimensions.
when goals from these three areas are explicitly and comprehensively incorporated into the vision
strategic and focused on long-term goals.

2.3 Stakeholder Theory and its relationship to sustainability

2.3.1 Conceptualization of stakeholders

In organizations, there is a set of stakeholders capable of affecting or being affected.
for the achievement of institutional objectives, a group usually called stakeholders (Marta,
2024). Freeman (1984), apud Freeman and Mcvea (2001), defines stakeholders as any group or
A person who influences or is influenced by the objectives of an organization, highlighting the nature of the organization.
relational aspects of the decision-making process and organizational results.

2.3.2 Stakeholder Theory and Corporate Social Responsibility (CSR)

Santos and Bertolini (2024) argue that Stakeholder Theory provides a basis for the
The orientation of organizations and their objectives, insofar as their survival is related to...
The ability to create and distribute wealth and value to stakeholder groups, especially stakeholders.
priorities. Kuzma, Oliveira and Silva (2017) add that the insertion of organizations in issues
Socio-environmental initiatives can represent business opportunities, while also contributing to...
Improving the quality of life for stakeholders and ensuring the sustainability of natural resources.

According to Oliveira, Santos and Magalhães (2019), it is necessary for organizations to respond to
In accordance with national and international market standards, there is a risk of competitive disadvantage.
In this context, management and quality practices geared towards sustainability become relevant. From
Since the 1990s, it has become conventional wisdom that viable economic progress demands
Productive relationships between stakeholders and institutions, establishing sustainable partnerships.
through corporate social responsibility (Oliveira, Santos and Magalhães, 2019).

2.3.3 The influence of stakeholders on sustainability practices

By adopting sustainable practices, companies seek a balance between actions.
Implemented practices and resulting advantages. Such practices can reshape and strengthen reputation.
organizational, while simultaneously affecting a network of individuals who influence or are influenced by it.
influenced by the organization — the stakeholders. Despite the growth of publications on
Regarding stakeholders and sustainability, Szabo and Ribeiro (2014) observe that there is still no understanding.
fully consolidated on concepts and theoretical frameworks applied to stakeholders in the context
of sustainability.

Machado et al. (2023) add that environmental management can have an impact
significantly impacts the company's image, considering that consumers and investors
They demonstrate a growing awareness of the need to adopt sustainable measures and...

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

impact reduction. Costa et al. (2022) reinforce that the adoption of good practices not only attracts It also fosters commitment from investors and strengthens the retention of partners. commercials in the company.

Dias, Henkes and Rossato (2020) highlight that the democratization of social information and the Rapid access to data in the 21st century amplifies the prominence of stakeholders in the environment. business, since formal and informal pressures may require stances that are more consistent with the contemporary environmental awareness. The authors add that companies need to recognize The presence of multiple internal and external agents influencing decisions makes management... Relational dynamics and governance are relevant elements in the implementation of sustainability strategies.

2.4 The synergy between TBL, ESG and stakeholders: building sustainable value

Contemporary consumer relations between companies and society are undergoing continuous evolution. improvement, and social and environmental issues associated with new consumer profiles of Products and services have a direct impact on business management (Oliveira, Santos and Magalhães, (2019). In this scenario, the integration between management tools and indicators becomes a strategy. to increase transparency, reduce risks, and support organizational decisions.

Chatterji and Levine (2006), cited in Morioka and Carvalho (2017), advocate the adoption of These indicators, in addition to financial metrics, contribute to a long-term understanding. regarding the company's situation and for risk reduction. Furthermore, such indicators allow that... Stakeholders identify organizations aligned with principles and values. Morioka and Carvalho (2017) They add that sustainable indicators should incorporate environmental, social, and economic criteria. They tend to be increasingly useful in the decision-making process. In this logic, the social factor of TBL incorporates... also the influence and impact of sustainability on society, mobilizing the concept of stakeholders.

According to Martins (2022), by adopting practices that favor environmental protection, well-being Through social and effective corporate governance, a company can improve its performance. financial and increase its market value. The TBL, in this sense, functions as a starting point for integration with ESG principles, which encompass relationships established between employees and suppliers and actions aimed at improving society (Costa et al., 2022).

Finally, it is worth highlighting that companies have a responsibility to act collaboratively. seeking solutions that not only enhance their image in the market, but also promote environmental care. Thus, they can generate positive results for the environment and strengthen the relationship with society, contributing to a renewed approach to achieving goals. organizational (Costa et al., 2022).

3 Materials and Methods

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

This work is characterized as a single case study, with a qualitative approach.
and descriptive in nature, conducted with the aim of understanding, in depth, how and why
The sustainable practices implemented at the Sobral Clinical Laboratory (Lacliso) have an impact on
different stakeholder groups. A case study design was chosen for its suitability.
to the investigation of contemporary phenomena in a real-world context, while preserving a holistic view of
object and allowing examination of organizational processes, relationships and mechanisms in operation.
(Sátyro and Albuquerque, 2020).

A qualitative approach was adopted to interpret perceptions, meanings, and evaluations.
assigned by participants to the sustainable initiatives observed, while the descriptive nature
It guided the recording and systematization of the phenomenon's characteristics, without the intention of establishing...
direct causal relationships (Nunes, Nascimento and Alencar, 2016). Complementarily, indicators
Numerical data associated with waste generation and disposal were analyzed using descriptive statistics.
giving the study a quantitative-qualitative dimension.

Prior to the empirical phase, a systematic literature review was conducted, covering
articles, books, dissertations and technical reports indexed in the Scopus, Web of Science and databases
SciELO. This phase supported the theoretical framework related to the Triple Bottom Line, ESG,
Sustainability in healthcare services and Stakeholder Theory (Brito, Oliveira and Silva, 2021), in addition to
to support the development of interview scripts and the definition of direct observation protocols.

The analysis unit corresponds to Lacliso, a laboratory founded in 1975, composed of
approximately 80 employees and operations distributed across about 20 locations in the state of
Ceará. The target population comprises the groups that interact directly with the organization.
and, therefore, they can influence or be influenced by their sustainable practices.

The sampling was intentional, seeking heterogeneity of perspectives and encompassing:
(i) a manager (managing partner), interviewed in two meetings; (ii) five employees from different sectors
distinct (finance, warehouse, reception, clinical analysis and quality); (iii) a representative of
strategic supplier (promotional material printing industry); (iv) eighteen responding clients
from an online questionnaire; and (v) a representative from a partner artisan community involved in social actions.
This sample design was guided by the criterion of thematic saturation, as proposed by Miles.
Huberman and Saldaña (2014).

The data collection was structured around four complementary, interconnected procedures.
to increase the consistency of the evidence with the following steps: (a) semi-structured interviews,
conducted based on a validated script in orientation (Appendix A), generating interviews; (b)
Systematic direct observation, guided by a field protocol (Appendix B), carried out in the units
(a) parent company and subsidiary; (b) online questionnaire, aimed at collecting data from customers; and (c) analysis

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

documentary, based on environmental indicator reports (2022–2024) and internal manuals, including textual documents and spreadsheets, as recorded by the author herself (2025).

The interviews were transcribed verbatim. All participants formalized their consent. Participation is through the Free and Informed Consent Form, meeting the parameters. ethical guidelines as outlined in CNS Resolution No. 466/2012 (Brazil, 2012).

The textual data were analyzed using categorical content analysis, according to Bardin (2011), developed in three stages: (i) pre-analysis; (ii) open and axial coding, with support from the MAXQDA software; and (iii) interpretive inference. In parallel, the numerical indicators of Waste (kg/year) was analyzed using descriptive statistics (means and percentage changes), which It enabled methodological triangulation between sources and techniques.

To strengthen analytical reliability, validation procedures were adopted. including peer debriefing, member checking with three interviewees, and systematic trail recording. audit.

4. Results and Discussion

4.1 Case Contextualization

This case study was conducted in a clinical laboratory located in The municipality of Sobral, Ceará, is a context recognized for its benchmark healthcare assistance and for... Significant presence of clinical analysis services. The laboratory is managed by Dr. Ticiana Mont'Alverne Parente Feijão, a pharmacist with an academic background that includes a master's degree in... Biotechnology graduate from the Federal University of Ceará and currently pursuing a doctorate in the field of Administration. His professional background includes experience in coordinating laboratories and... teaching in higher education, elements that contribute to the conduct of initiatives aimed at innovation and organizational improvement.

In its initial phase, management prioritized modernization and innovation in different areas and sectors. of the business, resorting to consulting services, process reviews, and measures aimed at expansion and growth. creation of new units. This guideline was accompanied by the effort to maintain standards of quality of service, in order to preserve the reputation and image of value perceived by customers.

In the period following the pandemic, an increase in social sensitivity was observed in with regard to sustainability, stimulated by factors associated with isolation and the increase in Concerns about risks and collective impacts have arisen. In this context, the environmental agenda has gained greater importance. centrality and has become more explicitly integrated into the decision-making horizon of management. The theme, which had already been of personal interest to the manager, began to demand further investigation and conversion into Effective practices in the business environment.

This movement spurred the development of a vision for the organization that was oriented towards...

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

Integrated sustainable practices: in the social sphere, involving the appreciation of employees, Competitive compensation, collaborative relationships with suppliers and partners; in the economic sphere, linking value creation and competitiveness to principles of justice and responsibility; and in the axis environmental, encompassing waste management, impact reduction and the adoption of intentional practices aimed at promoting environmentally friendly behaviors.

The Sobral Clinical Laboratory was founded in 1975 and has approximately 80 employees. It has employees and operates in 8 units in the municipality of Sobral, in addition to maintaining a presence in other locations. Cities in Ceará, totaling more than 20 units. It is a recognized organization. regionally through the performance of laboratory tests and the adoption of services considered pioneering initiatives in the region, such as the collection of material for DNA testing and the Newborn Screening Test, made possible through partnerships with leading national and international laboratories.

Despite its recognition and prominent position in its field of operation, the laboratory It began to face a strategic challenge related to sustainability. Considering the requirements environmental, health regulations and social expectations affecting the sector, practices Sustainable products have become a competitive differentiator, with the potential to have a direct impact. in organizational reputation and the ability to maintain advantages in the market.

This understanding of the context was reinforced when the manager came into contact with the ALI Project. (Local Innovation Agent), understanding in a more systematic way the relevance of implementing Sustainability practices. ALI, an initiative linked to Sebrae, uses a methodology based on... An organizational diagnosis that encompasses multiple dimensions of the business, producing an interpretation. structured company internship and guiding suggestions and strategies consistent with needs. identified. According to Sebrae (2018), the ALI Innovation Management methodology was structured to enable systematic innovation in companies of different sizes and structures.

Within the scope of the ALI Project, the Innovation Radar methodology is operationalized by A structured questionnaire with 18 questions, associated with 18 themes, including key indicators. Goal setting, monitoring, lean operation, process management, high-performance culture performance, customer satisfaction, pricing, advertising, energy management, management of water, waste reduction, process innovation, product and service innovation, culture of innovation, internal digitization, digital presence and electronic payment methods (Feijão et al., 2022).

In the case analyzed, the ALI Radar considered dimensions such as management by indicators, management of operations, marketing, sustainable practices, innovation and digital transformation (Feijão et al., 2022). The assessment of sustainable practices indicated a lack of a policy for implementing them. Sustainability in its social, economic, and environmental dimensions, limited to the separation of Common and hospital waste. The need to structure waste management was also identified.

RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

and to develop actions for the reuse of inputs, as well as to establish indicators for to measure monthly water and energy consumption and waste generation. These elements were not perceived, until then, as significant impacts on the environment, which contributed to the understanding that the implementation of sustainable actions was a strategic decision in an increasingly competitive market.

The decision to implement new practices regarding organizational routine was understood as a challenge, both because of its unprecedented nature within the company and because of the uncertainty surrounding it. Financial and structural risks, and the expected return, including internal and external effects. In addition to operational changes, it was about internalizing an ideal through processes of Awareness and cultural incorporation. In this sense, measuring the impacts of actions on Stakeholder engagement becomes relevant, considering that institutional reputation and image influence the The way the organization is perceived socially. To make implementation feasible, it would be necessary To coordinate initiatives on different fronts, ensuring that sustainable actions did not compromise The productivity and performance of the laboratory.

4.2 Indicators

4.2.1 Sustainable Practices and Triple Bottom Line

When examining the laboratory's insertion into the Triple Bottom Line paradigm, with emphasis Initially, within the environmental pillar, data and information on sustainable practices were systematized. adopted, based on institutional documents, reports, and interviews. Next, the evidence They were organized and interpreted in light of the impacts associated with each action on the stakeholders. based on the interviews conducted.

The process of implementing sustainable practices began with the donation of waste materials. To make this step possible, the administration established a partnership with the Municipal Government and AMMA. (Municipal Environmental Agency), seeking to understand flows and responsibilities, in addition to To present the project conceived for the laboratory. From this collaboration, donations were obtained. of plant seedlings intended for distribution to customers, designed as a mitigation strategy of the environmental impact of the laboratory, through the addition of new trees.

Considering the nature of the service provided, the laboratory generates waste such as plastics, cardboard and other materials used in internal routines, which, if not properly handled, Separated and reused, they produce adverse effects on the environment. As a response to this Regarding the problem, management initiated a structured waste management process, with the development of indicators aimed at evaluating the volume generated and guiding action plans that would allow for separation such waste from common garbage and assign it another destination. To organize the execution and strengthen the To raise team awareness, an internal document detailing the action plan and the... Each employee's responsibilities, with activities performed monthly.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

In addition, systematic control of solid waste produced by was instituted.
laboratory, with a description of the items collected in different sectors, in order to allow the
monthly and annual monitoring of the accumulation of waste sent for donation, through
indicators.

The environmental indicators, obtained from donations and internal management, showed
growth in waste collection during the analyzed period, as well as the proper disposal of materials.
Recyclables are sent to local cooperatives. In the period from 2022 to 2024, an increase of 569.3 kg was observed.
Collection and delivery of 3,253.1 kg of recyclable materials to cooperatives in the area.

The integrated reading of the indicators also made it possible to estimate values associated with
commercialization of materials sent for recycling, using the table as a reference.
CEMPRE (Business Commitment to Recycling) prices. Therefore, the weight of the material
The donated amount was multiplied by average market values, allowing for projections of potential revenue.
obtained from recycling. As a result of the estimates, it was recorded that, in 2024, the value
The projected annual cost could reach R$ 6,286.15, considering the parameter used in the simulation.
presented.

In addition to the economic estimates linked to recycling, calculations were made of
environmental equivalence, based on conversion references provided by Conesul. In the case
Based on the paper, the parameter adopted was that 1,000 kg corresponds to the preservation of 22 trees; with
Based on this reference and the laboratory's quantitative data, it was estimated that 44 trees would be preserved in the area.
year 2024.

In the case of plastic, the parameter used was that 1,000 kg is equivalent to the preservation of 0.8
barrels of oil (159 liters). The conversion was carried out through mass transformation.
in liters, based on reference density, allowing for the estimation of environmental equivalence.
associated with the volume of plastic waste donated in 2024.

4.2.2 Environmental pillar: circularity and social destination of recycling

The data also show that waste management was articulated not only as
operational compliance, but as a circularity strategy: waste that was previously discarded
They began to be separated and donated, expanding proper disposal and reducing pressure on
natural resources. This movement simultaneously favors environmental and social outcomes, a
since the donated material integrates local recycling chains and can be converted into income for the companies.
agents involved.

4.2.3 Economic pillar: eco-efficiency and rationalization of inputs

In the economic pillar, the laboratory presented initiatives associated with eco-efficiency and...
rationalizing the consumption of inputs, seeking to reconcile operational performance and

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

Sustainability. In this direction, the discussion argues that sustainable practices can be associated to improved performance and value gains when integrated into corporate management (Martins, 2022), and that effective sustainability requires simultaneous attention to the environmental, social and economic, especially at the intersection between these areas (Arya; Srivastava; Jaiswal, 2019).

In the interview with the manager, internal changes focused on cost savings were described. input efficiency and waste reduction. Management mentioned the monthly monitoring of indicators. of waste, the reduction of hypochlorite consumption and the acquisition of a dilution machine for products cleaning, highlighting that the new packaging and dilution method contributed to reducing the Consumption. Reverse logistics for hematology reagent packaging was also reported, with Reusing plastic bottles for collection at designated points reduces waste generation. and integrating the flow of materials into the internal supply chain.

4.2.4 Impact on stakeholders

The stakeholder impact analysis was constructed based on the groups directly involved. related to sustainable actions: community, employees, customers and suppliers. They were Impacts were identified on diverse audiences, including a children's hospital, a nursing home, and the general public. children, through specific actions (such as donations and playful initiatives), in addition to waste pickers and Customers benefited from donations and the distribution of seedlings. An impact related to [specific area/purpose] was also identified. artisan community, participating in an action that combined the reuse of waste and the generation of income for local artisans.

4.2.4.1 Stakeholder: employees

To examine employee perception, a structured questionnaire was applied with eight questions, including space for suggestions. The data were subjected to content analysis. According to Bardin, the goal is to identify core meanings and recurring categories.

The results indicate that employees recognize sustainability as a practice. associated with reducing environmental impacts, social responsibility, and encouraging recycling, emphasizing the relevance of the initiative to the community and to the laboratory. It is also noted, The accounts show an association between actions and changes in daily life, with a strengthening of culture. An organization focused on waste separation and reuse.

In terms of individual impact, the data indicate adherence to domestic practices of Waste separation is carried out by a significant portion of the participants. It is noted that 83% of them Collaborators reported adopting household waste separation practices, indicating potential for Dissemination of practices beyond the organizational environment.

Additionally, it is observed that some of the respondents presented positions neutral on specific issues, and that most did not answer the final questions (7 and 8), relating to

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

Regarding perceived impacts and suggestions, a fact attributed, in the source text, to a lack of time at the moment of...
filling out. Still, among the contributions recorded, recommendations such as appear.
Increase the number of trash cans and signage, and expand sustainable alternatives in daily institutional life.

4.2.4.2 Stakeholder: customers

Customer perception was obtained through an online questionnaire (Google Forms) consisting of
Three central questions, directed at prior knowledge of the actions, and the weight of the practices.
Sustainable factors influence the decision to choose a service and the perception of associated benefits/differentiating factors.

Records indicate that, among 18 respondents, five stated they were aware of...
sustainable actions of the laboratory (28%). Among those who were aware, three stated that the practices
Sustainable factors positively influenced the choice of service, accounting for 60% of that decision.
subgroup.

The responses also suggest that knowledge about the actions generally occurred through
third-party mediation or campaigns and events, which, according to the interpretation of the source text, demonstrates
the need to strengthen strategies for disseminating information and continuously measuring the impact of these
practices, including through indicators and satisfaction tools.

4.2.4.3 Stakeholder: supplier

The supplier stakeholder analysis was conducted based on a semi-structured interview.
carried out with a strategic partner, characterized as an industry active in materials.
promotional, editorial and packaging, which already collaborated with the laboratory before the actions
sustainable. The text itself acknowledges that the evaluation was restricted to one supplier, which limits the
The breadth of the inferences is maintained, while preserving the descriptive depth of the case analyzed.

According to the supplier's account, contact for cooperation on sustainable actions occurred from
The laboratory's demand, initially associated with an action for Children's Day. The testimony
describes the use of materials that would otherwise be discarded (such as associated plastic supports).
to the collection process), converting them into playful products (dominoes) and kits (such as painting), with
customization and proper packaging. The text also notes that the materials were
targeted at specific audiences (children and elderly care homes), with reuse coordinated with
production logistics and waste reuse.

Final Considerations

Returning to the overall objective of this research — to analyze how the environmental practices adopted
The results of laboratory work have repercussions for the organization's stakeholders — and specific objectives —
to examine the laboratory's actions in light of the pillars of the Triple Bottom Line (TBL), in the social dimension,
environmental and economic impacts, as well as understanding how such sustainable actions impact them.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

customers, suppliers, community and employees — it is clear that the outlined purposes
The goals were achieved. The initiatives observed demonstrate adherence to the pillars of the TBL, insofar as they were achieved.
in which they prove to be economically viable, incorporate actions of a social nature and contribute to the
mitigation of environmental impacts. Furthermore, the transcripts of the interviews indicate that the effects
The perceived results were favorable, as they highlighted changes in employees' understanding of
Sustainability is reflected in behavior itself, both in and out of the workplace. In what way...
Regarding customers, the need to expand dissemination and public awareness was identified.
Regarding these practices, the adoption of specific communication strategies is recommended and
Engagement initiatives aimed at this audience, linked to the theme of sustainability.

The relevance of the study stems from the fact that organizations are becoming increasingly...
demanded to incorporate sustainable practices and, when implemented consistently, such
These practices tend to positively influence stakeholders, engaging with the social dimension.
from TBL. Considering that stakeholders constitute a central component for the
organizational development, investigating how certain actions affect these actors.
It contributes to the outlining of new strategies and the improvement of existing practices.
for identifying opportunities for sustainable action that better align with expectations.
internal and external.

It is important to acknowledge, however, that there are limitations that need to be considered when interpreting the findings.
The research was conducted in only one laboratory, which limits a broader understanding and
A comparative analysis of the reality of other organizations in the same segment, limiting generalization.
The results were applied to different contexts. There were also limitations regarding the scope of
Stakeholders: Among the partner suppliers, only one participant was interviewed; regarding this...
Regarding the potentially impacted communities, only one member participated; and, among the
Of the clients, the questionnaire was answered by 18 participants. These conditions reduce diversity.
The perspectives gathered indicate the need for further investigation.

Despite these limitations, the research stands as a benchmark for studies.
subsequent, insofar as it organizes evidence and contributes to qualifying the debate on
Sustainability and its impacts on stakeholders. For future research, it is recommended to...
expanding the empirical scope, including laboratories from other regions, in order to produce
a more comprehensive understanding of sustainable practices and their relationship with stakeholders,
strengthening academic production on the topic and expanding the comparative basis for analyses in
field.

References

ALHADDI, HASSAN et al. *Triple bottom line and sustainability: literature review.* Business and

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

Management Studies, vol. 1, no. 2, 2015.

ALVES, ELIANE ELIAS C.; FERNANDES, IVAN FDAL Sustainable Development Goals: a transformation in the scientific debate on development? *Meridiano 47,* no. 21, 2020.

ARYA, PRATIKSHA; SRIVASTAVA, MANMOHAN K.; JAISWAL, MAHESH P. Modeling environmental and economic sustainability of logistics. *Asia-Pacific Journal of Business Administration,* vol. 12, no. 1, p. 73–94, 2019.

BALDISSERA, RUDIMAR; KAUFMANN, CAROLINE. Organizational communication and sustainability: on the model established within the communicated organization. *Organicom,* v. 10, n. 18, p. 59–70, 2013.

BARDIN, LAURENCE. *Content Analysis.* São Paulo: Edições 70, 2011.

BRAZIL. *Law No. 12,305, of August 2, 2010.* Establishes the National Solid Waste Policy. Official Gazette of the Union, Brasília, DF, 2010.

BRITO, ANA PAULA G.; OLIVEIRA, GISELE S.; SILVA, BRUNO A. The importance of bibliographic research in the development of qualitative research in the field of education. *Cadernos da FUCAMP,* v. 20, n. 44, p. 1–15, 2021.

BRUNDTLAND, GRO HARLEM; KHALID, MANSOUR. *Our Common Future.* Rio de Janeiro: Getulio Vargas Foundation, 1991.

CARTER, CRAIG R.; ROGERS, DALE S. A framework of sustainable supply chain management: moving toward new theory. *International Journal of Physical Distribution & Logistics Management,* v. 38, no. 5, p. 360–387, 2008.

CEMPRE. *Ciclosoft 2016 Survey: X-raying selective waste collection.* São Paulo: CEMPRE, 2016.

CONAMA. *Resolution No. 358, of April 29, 2005.* Provides for the treatment and final disposal of healthcare waste. Brasília, 2005.

COSTA, RODRIGO; COSTA, TATIANA PIRES; CONCEIÇÃO, MARCELO MAGERA; CONCEIÇÃO, JOÃO TELESI PACHECO. ESG: the pillars for the challenges of sustainability. *RECIMA21 – Multidisciplinary Scientific Journal,* v. 3, no. 9, 2022.

DIAS, DANIEL O.; HENKES, JEFERSON A.; ROSSATO, IARA F. Environmental management as a bridge between companies and stakeholders. *Revista Gestão & Sustentabilidade Ambiental,* v. 9, n. 1, p. 3–22, 2020.

ELKINGTON, JOHN. *Cannibals with forks: the triple bottom line of 21st century business.* Oxford: Capstone, 1997.

ELKINGTON, JOHN. *Enter the triple bottom line.* London: Routledge, 2004.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

FEIJÃO, THAIS MAP et al. Innovation, sustainability and SDGs amidst the Covid-19 pandemic. In: *ANPAD Meeting,* XLVI, 2022.

FREEMAN, R. EDWARD; MCVEA, JOHN. A stakeholder approach to strategic management. *SSRN Electronic Journal,* 2001.

IBAMA. *Normative Instruction No. 13, of December 18, 2012.* Brasília, 2012.

KUZMA, ELIANE L.; DOLIVEIRA, SANDRA LD; SILVA, ANA Q. Competencies for organizational sustainability: a systematic review. *Cadernos EBAPE.BR,* v. 15, p. 428–444, 2017.

LINCOLN, YVONNA S.; GUBA, EGON G. *Naturalistic inquiry.* Beverly Hills: Sage Publications, 1985.

LOURDES, BEATRIZ M.; MACKENZIE, ULYSSES PM; SANTOS, J.; SCHAUN, ANGELA. Theoretical considerations on the concept of sustainability. In: *SEGeT,* VII, 2010.

MACHADO, LAURA VIEIRA et al. *The importance of environmental management at the Milhão company.* 2023.

MARTA, BRUNA CN *Sustainability in higher education institutions.* 2024. Dissertation (Master's in Marketing Management) – University of Porto, Porto, 2024.

MARTINS, MARCELO. *The relationship between the disclosure of ESG practices and the market value of Brazilian companies.* 2022. Dissertation (Master's in Accounting Sciences) – Federal University of Uberlândia, Uberlândia, 2022.

MAZZIONI, SANDRA et al. Reflections of ESG practices and adherence to the SDGs on corporate reputation. *RGO – Revista Gestão Organizacional,* v. 16, n. 3, p. 59–77, 2023.

MILES, MATTHEW B.; HUBERMAN, A. MICHAEL; SALDAÑA, JOHNNY. *Qualitative data analysis.* 3rd ed. Thousand Oaks: Sage, 2014.

MORIOKA, SANDRA N.; CARVALHO, MARLY M. Discussing sustainability in a business context. *Gestão & Produção,* v. 24, n. 3, p. 514–525, 2017.

NUNES, GABRIELA C.; NASCIMENTO, MARIA CD; ALENCAR, MARCOS AC. Scientific research: basic concepts. *ID on Line – Revista de Psicologia,* v. 10, n. 29, p. 144–151, 2016.

OLIVEIRA, LUIZ RD et al. Sustainability: from the evolution of concepts to implementation. *Production,* v. 22, n. 1, p. 70–78, 2012.

OLIVEIRA, MARCELO TC; SANTOS, ELISÂNGELA J.; MAGALHÃES, ANDRÉ L. Corporate social responsibility. *Brazilian Journal of Development,* v. 5, no. 10, p. 20237–20260, 2019.

Year V, v.2 2025 | Submission: 12/20/2025 | Accepted: 12/22/2025 | Publication: 12/24/2025

SANTOS, MARIA S. et al. Evaluation of the triple bottom line in a health cooperative. *Colóquio – Revista do Desenvolvimento Regional,* v. 21, n. 2, p. 26–49, 2024.

SANTOS, TATIANA CB; BERTOLINI, GERALDO R. Stakeholder pressure for the adoption of sustainable practices. *Revista Científic@ Universitas,* v. 10, n. 2, p. 178–204, 2024.

SÁTYRO, NATÁLIA GD; D'ALBUQUERQUE, RAFAEL W. What is a case study. *Society and Culture,* v. 23, 2020.

SEBRAE. *ALI Guide – Volume* 1. João Pessoa, 2018.

SZABO, VIVIAN; COSTA, BRUNO K.; RIBEIRO, HENRIQUE CM. Stakeholders and sustainability. *REBRAE,* v. 7, n. 2, p. 174–190, 2014.

VENTURINI, LUCIANA DB *The triple bottom line model and sustainability in public administration.* 2015.