



FEDERAL UNIVERSITY
OF CEARÁ

Environmental governance assessment tool: a study in federal higher education institutions in Ceará

Ferramenta de avaliação da governança ambiental reportada: um estudo nas instituições federais de ensino superior do Ceará

Herramienta de evaluación de la gobernanza ambiental reportada: un estudio en las instituciones federales de educación superior de Ceará

<https://doi.org/10.36517/contextus.2026.96605>

Lucas Lucena da Silva

<https://orcid.org/0009-0006-1551-1374>

Master in Public Administration (Profiap) at the University of International Integration of Afro-Brazilian Lusophony (Unilab)
lucas@unilab.edu.br

Erlanio Ferreira Lima

<https://orcid.org/0000-0001-9999-4495>

Master's student in Public Administration (Profiap) at the University of International Integration of Afro-Brazilian Lusophony (Unilab)
erlanioferreiralima@gmail.com

Sérgio Henrique de Oliveira Lima

<https://orcid.org/0000-0002-2738-4492>

Professor at the University of International Integration of Afro-Brazilian Lusophony (Unilab)
PhD in Administration and Controllershship from the Federal University of Ceará (UFC)
sergio.lima@unilab.edu.br

Alexandre Oliveira Lima

<https://orcid.org/0000-0002-8878-7965>

Professor at the University of International Integration of Afro-Brazilian Lusophony (Unilab)
PhD in Business Administration from the University of Fortaleza (Unifor)
alexandrelima@unilab.edu.br

Hugo Azevedo Rangel de Moraes

<https://orcid.org/0000-0003-0006-6360>

Professor at the University of International Integration of Afro-Brazilian Lusophony (Unilab)
PhD in Administration from the Municipal University of São Caetano do Sul (USCS)
hugomorais@unilab.edu.br

Article Information

Uploaded on 18/03/2026
Final version on 09/06/2026
Accepted on 12/06/2026
Published online on 02/09/2026

Fast-Track – XXVII International Meeting on Business Management and Environment at FEA/USP (ENGEMA)

Interinstitutional Scientific Committee
Editor-in-chief: Diego de Queiroz Machado
Evaluation by the double blind review system (SEER / OJS - version 3)



ABSTRACT

Background: Environmental governance has established itself as a relevant issue in Brazilian Federal Higher Education Institutions (IFES), especially in light of the transparency and accountability requirements associated with the Integrated Reporting model adopted by the Brazilian Federal Public Administration (APF). Although there are tools designed to assess sustainability in higher education, initiatives aimed at systematically analyzing the environmental governance reflected in the Management Reports of IFES remain limited.

Purpose: To propose an assessment tool for evaluating the environmental governance reflected in the Management Reports of IFES in Ceará for the period from 2020 to 2024.

Method: This is an applied, qualitative, and exploratory study conducted through a documentary analysis of the Management Reports of higher education institutions in Ceará and a literature review on environmental governance, institutional sustainability, Integrated Reporting, and assessment methods.

Results: The results revealed a predominance of descriptive and fragmented reports, with limited use of targets, indicators, and monitoring mechanisms. The most frequently reported categories were energy efficiency and waste management, while topics related to greenhouse gas emissions mitigation, biodiversity, and sustainable land use received less attention. The tool allowed for a comparison of the institutions' performance and the identification of different levels of development in the reported practices.

Conclusions: This study contributes to strengthening transparency, accountability, and institutional sustainability at Federal Institutions of Higher Education (IFES) by providing a tool capable of systematizing the analysis of environmental information reported in Management Reports and supporting benchmarking and decision-making processes.

Keywords: environmental governance; Integrated Reporting; accountability; Federal Higher Education Institutions; institutional sustainability.

RESUMO

Contextualização: A governança ambiental tem se consolidado como tema relevante nas Instituições Federais de Ensino Superior (IFES) brasileiras, especialmente diante das exigências de transparência e prestação de contas associadas ao modelo de Relato Integrado adotado na Administração Pública Federal (APF) brasileira. Embora existam instrumentos voltados à avaliação da sustentabilidade no ensino superior, ainda são limitadas as iniciativas destinadas à análise sistemática da governança ambiental evidenciada nos Relatórios de Gestão das IFES.

Objetivo: Propor uma ferramenta de avaliação da governança ambiental evidenciada nos Relatórios de Gestão das IFES cearenses, referentes ao período de 2020 a 2024.

Método: Trata-se de uma pesquisa aplicada, qualitativa e exploratória, desenvolvida por meio de análise documental dos Relatórios de Gestão das IFES cearenses e revisão de literatura sobre governança ambiental, sustentabilidade institucional, Relato Integrado e métodos de avaliação.

Resultados: Os resultados evidenciaram predominância de relatos descritivos e fragmentados, com limitada utilização de metas, indicadores e mecanismos de monitoramento. As categorias mais frequentemente reportadas foram eficiência energética e gestão de resíduos, enquanto temas relacionados à mitigação de emissões de gases de efeito estufa, biodiversidade e uso sustentável do solo apresentaram menor evidência. A ferramenta permitiu comparar o desempenho das instituições e identificar diferentes níveis de desenvolvimento das práticas reportadas.

Conclusões: O estudo contribui para o fortalecimento da transparência, da *accountability* e da sustentabilidade institucional nas IFES, ao oferecer um instrumento capaz de sistematizar

a análise das informações ambientais reportadas nos Relatórios de Gestão e subsidiar processos de avaliação comparativa e tomada de decisão.

Palavras-chave: governança ambiental; Relato Integrado; *accountability*; Instituições Federais de Ensino Superior; sustentabilidade institucional.

RESUMEN

Contextualización: La gobernanza ambiental se ha consolidado como un tema relevante en las Instituciones Federales de Educación Superior (IFES) brasileñas, especialmente ante las exigencias de transparencia y rendición de cuentas asociadas al modelo de Reporte Integrado adoptado en la Administración Pública Federal (APF) de Brasil. Aunque existen instrumentos orientados a la evaluación de la sostenibilidad en la educación superior, todavía son limitadas las iniciativas destinadas al análisis sistemático de la gobernanza ambiental evidenciada en los Informes de Gestión de las IFES.

Objetivo: Proponer una herramienta de evaluación de la gobernanza ambiental evidenciada en los Informes de Gestión de las IFES del estado de Ceará, correspondientes al período 2020-2024.

Método: Se trata de una investigación aplicada, cualitativa y exploratoria, desarrollada mediante el análisis documental de los Informes de Gestión de las IFES cearenses y una revisión de la literatura sobre gobernanza ambiental, sostenibilidad institucional, Reporte Integrado y métodos de evaluación.

Resultados: Los resultados evidenciaron un predominio de informes descriptivos y fragmentados, con una utilización limitada de metas, indicadores y mecanismos de seguimiento. Las categorías reportadas con mayor frecuencia fueron la eficiencia energética y la gestión de residuos, mientras que los temas relacionados con la mitigación de emisiones de gases de efecto invernadero, la biodiversidad y el uso sostenible del suelo presentaron una menor divulgación. La herramienta permitió comparar el desempeño de las instituciones e identificar diferentes niveles de desarrollo de las prácticas reportadas.

Conclusiones: El estudio contribuye al fortalecimiento de la transparencia, la rendición de cuentas y la sostenibilidad institucional en las IFES, al ofrecer un instrumento capaz de sistematizar el análisis de la información ambiental reportada en los Informes de Gestión y de apoyar procesos de evaluación comparativa y toma de decisiones.

Palabras clave: gobernanza ambiental; Reporte Integrado; rendición de cuentas; Instituciones Federales de Educación Superior; sostenibilidad institucional.

How to cite this article:

Silva, L. L., Lima, E. F., Lima, S. H. O., Lima, A. O., & Morais, H. A. R. (2026). Environmental governance assessment tool: A study in Federal Higher Education Institutions in Ceará. *Contextus – Contemporary Journal of Economics and Management*, 24, e96605. <https://doi.org/10.36517/contextus.2026.96605>

1 INTRODUCTION

Governance has become widespread as a management model in Brazilian public administration (Martins et al., 2022) and has been establishing itself as a relevant topic for the creation of public value at the federal level (Girardi & Torres, 2024). In this context, environmental governance plays a prominent role in Federal Higher Education Institutions (IFES), which, as Accountability Units (UPC), must annually report on their sustainability practices through their Management Reports, in accordance with guidelines from the Brazilian Federal Court of Accounts (TCU) (TCU, 2020, 2022).

Recent literature has highlighted that environmental governance in Higher Education Institutions (HEIs) constitutes a dimension of institutional governance aimed at incorporating sustainability into planning, monitoring, decision-making, and accountability processes (Jimu & Rennkamp, 2023; Moraes & Vieira, 2022). In this context, universities are recognized as strategic actors in generating social, environmental, and economic value (Moraes & Vieira, 2022), although the integration of sustainability into formal processes of governance, planning, and institutional evaluation still occurs in an uneven and fragmented manner at many institutions (Jimu & Rennkamp, 2023).

In the context of higher education institutions in Ceará (Federal University of Ceará - UFC; University of International Integration of Afro-Brazilian Lusophony - Unilab; Federal University of Cariri - UFCA; and Federal Institute of Education, Science, and Technology of Ceará - IFCE), an exploratory review of the Management Reports covering the period from 2020 to 2024 reveals a predominance of descriptive and, at times, fragmented accounts of environmental governance practices. One possible explanation for this fragmentation may be related to the current accountability cycle itself.

Although a robust regulatory framework exists - such as the TCU guidelines based on the Integrated Reporting model - and although models for assessing sustainability in higher education institutions (HEIs) can be found in the literature, initiatives aimed at developing tools capable of operationalizing - in an objective and comparable manner - the assessment of environmental governance as reflected in the Management Reports of Brazilian state higher education institutions (IFES) remain limited, especially given the specific characteristics of the accountability model adopted by the Brazilian Federal Public Administration (APF).

Furthermore, recent studies have focused their analyses on the quality of the disclosed information, adherence to the principles of Integrated Reporting, or the assessment of specific sustainability indicators (Fonseca et al., 2024; Maria et al., 2021; Ribeiro et al., 2024). However, research aimed at developing tools to systematically analyze the environmental governance reported by public higher education institutions remains scarce, particularly from the perspective of materiality and accountability in the Brazilian context.

Given this scenario, the following research question arises: what objective criteria can be proposed to support the assessment of environmental governance as evidenced in the Management Reports of public higher education institutions in Ceará for the period from 2020 to 2024?

This study aims to propose a tool to assist in the evaluation of environmental governance as reflected in the Management Reports of public higher education institutions in Ceará. To achieve this objective, the study sought to: (i) map the environmental governance practices described in the Management Reports of each IFES; (ii) establish an evaluation scale with objective descriptors; and (iii) apply the developed tool to analyze the environmental governance reflected in the reports of the institutions under investigation.

This research is justified by the need to enable a more objective and comparative assessment, in order to assist public managers in accountability processes and strengthen transparency and accountability in the public sector. In addition to contributing to the improvement of accountability mechanisms, the study offers a tool with the potential for replication in other public organizations, expanding the possibilities for comparative analysis of institutionally reported environmental governance. The selection of IFES institutions in Ceará stems from the diverse context in which these institutions operate, representing different realities of Brazilian federal higher education.

2 THEORETICAL FRAMEWORK

This theoretical framework addresses the main concepts underpinning the research. First, it discusses the relationship between public governance, accountability, and environmental governance. Next, it presents the fundamentals of Integrated Reporting, with emphasis on the concepts of materiality and value creation. Finally, it examines the challenges of institutional sustainability and environmental governance in higher education institutions, which inform the development of the proposed assessment tool.

2.1 Public governance, accountability, and environmental governance

In the context of the Brazilian APF, public governance policy was institutionalized by Decree No. 9,203, dated November 22, 2017, which establishes principles such as integrity, reliability, transparency, accountability, and responsibility, among others (Brazil, 2017). One concept that emerges from this discussion - accountability - represents the

need to ensure transparency in actions and to take responsibility for the results achieved, rather than merely the obligation to report on them (Buta et al., 2018; IIRC, 2021).

Environmental governance, in turn, refers to the processes and institutions through which multiple social actors, beyond the State, make decisions on environmental issues, with a view to the integrity of the planet (Adams et al., 2020; Jacobi & Sinisgalli, 2012). This issue poses a challenge for the Brazilian Public Administration, especially because, in addition to being responsible for formulating and overseeing environmental policies in the country, it is also called upon to present its results in an integrated manner within its institutions. The Environmental Agenda in Public Administration (A3P), promoted by the Ministry of the Environment, and the Master Plan for Sustainable Logistics (PLS) are examples of initiatives that have fostered the theme of environmental sustainability in the public sector.

In the context of higher education institutions (HEIs), environmental governance has been gaining prominence in recent years due to the role these institutions play in promoting sustainable development. However, incorporating sustainability into formal governance structures still poses a challenge for many higher education organizations (Jimu & Rennkamp, 2023; Moraes & Vieira, 2022).

2.2 Integrated Reporting, materiality, and value creation

The TCU, as an external oversight body, is responsible for consolidating governance practices within the Brazilian public administration, overseeing management, and establishing regulations that guide accountability (Brazil, 1988, 1992; TCU, 2022). Among the tools used, the Management Report stands out; this mandatory document for UPCs aims not only to explain where public funds were spent but also to justify how these investments translated into value for society (TCU, 2018, 2020).

In recent years, the Integrated Reporting model - created by the International Integrated Reporting Council (IIRC) and currently overseen by the IFRS Foundation - has been adopted as standard for preparation of management reports in the Brazilian public sector (IIRC, 2021; TCU, 2022). TCU Normative Instruction No. 84/2020 made the use of this model mandatory for UPCs (TCU, 2020), thereby strengthening mechanisms for transparency and accountability. The Integrated Report seeks to demonstrate, in an interconnected manner, how organizations use different forms of capital (financial, human, intellectual, social, and natural) to generate value over time, incorporating both financial and non-financial information and emphasizing material issues for decision-making (IIRC, 2021; Maria et al., 2021; Moraes & Vieira, 2022). In this context, the model goes beyond the simple disclosure of financial results by seeking to highlight the social, environmental, and economic impacts resulting from institutional activities (Fonseca et al., 2024; Moraes & Vieira, 2022).

From this perspective, value creation results from the interaction between different forms of capital and must consider the impacts on the organization, its stakeholders, and the environment over time. Thus, the disclosure of information related to natural capital and environmental impacts becomes a key element in understanding the organization's capacity to generate value in a sustainable and transparent manner (Marçal et al., 2022).

In this context, the principle of materiality involves identifying and prioritizing relevant issues, considering both the organization's impact on the world and the world's impact on the organization (double materiality), thereby promoting consistent and transparent communication (ABNT, 2022; TCU, 2022). It should be emphasized, however, that the integrated reporting tool should not be merely rhetorical or delegated to the organizational marketing department. It must effectively reflect the adoption of governance practices, integrated thinking, risk management, integrated assessment, and careful monitoring of the future (Eck & Nel, 2015).

In addition to materiality, the Integrated Report is grounded in the concept of integrated thinking, understood as the organizational capacity to comprehend the interdependencies among different areas, processes, and forms of capital involved in value creation. From this perspective, the preparation of the report must reflect practices that are effectively embedded in institutional governance, ensuring that the disclosure of environmental information is not limited to isolated or merely symbolic initiatives. The literature indicates that the absence of this integrated thinking tends to result in predominantly descriptive reports, with little connection among strategy, risks, performance, and sustainability (Maria et al., 2021).

ABNT PR 2030 Recommended Practice presents concepts, guidelines, and an evaluation model for ESG (Environmental, Social, and Governance). Based on this standard, environmental sustainability indicators should demonstrate the development of the organization's practices in accordance with its policy, objectives, and targets, aiming for continuous improvement and taking into account the expectations of stakeholders (ABNT, 2022).

In the context of higher education institutions (HEIs), recent studies have shown gradual progress in the adoption of Integrated Reporting as a tool for accountability and transparency. Research conducted with Brazilian federal universities indicates that the use of this model has contributed to expanding the disclosure of information related to governance, strategy, and institutional performance. However, challenges persist regarding the effective incorporation of integrated thinking and the quality of the information disclosed, especially concerning the connection among actions taken, performance indicators, and the generation of public value (Ribeiro et al., 2024). These results suggest that the formal

adoption of the Integrated Report does not, in and of itself, guarantee the consolidation of governance practices capable of promoting an integrated vision of institutional sustainability.

2.3 Environmental governance and institutional sustainability in Higher Education Institutions

Higher education institutions play a strategic role in promoting sustainable development, not only through the production of scientific knowledge but also through their ability to influence behaviors, organizational practices, and public policies. In this context, universities are often viewed as prime venues for implementing and disseminating initiatives focused on environmental sustainability, simultaneously serving as educational institutions, public organizations, and environments for testing innovative solutions (Jimu & Rennkamp, 2023; Moraes & Vieira, 2022).

Despite this potential, incorporating sustainability into institutional routines remains a challenge for many higher education organizations. Studies indicate that environmental actions are often carried out in a fragmented manner, concentrated in specific sectors or isolated initiatives, without effective coordination with governance, strategic planning, and institutional management processes. This fragmentation hinders the consolidation of permanent environmental policies and reduces the ability to monitor the results achieved, compromising the integration of sustainability into decision-making processes and institutional management (Jimu & Rennkamp, 2023).

In addition to the challenges related to integrating sustainability into institutional processes, recent studies have highlighted that highly material environmental issues — such as climate change, greenhouse gas emissions, and biodiversity conservation — still receive unequal attention in the management and reporting mechanisms adopted by different organizations. This situation can undermine the understanding of institutional impacts on natural capital and limit the capacity for accountability regarding strategic environmental issues (Hassan et al., 2025).

In this context, the literature has emphasized the importance of governance for sustainability as a mechanism capable of integrating environmental objectives into institutions' formal decision-making structures. From this perspective, sustainability is no longer understood merely as a set of one-off projects or actions but becomes a cross-cutting element of organizational management, influencing planning, execution, monitoring, and accountability processes. The effectiveness of this integration depends on the existence of institutional mechanisms capable of coordinating different actors, establishing priorities, tracking indicators, and promoting transparency in the actions undertaken (Jimu & Rennkamp, 2023; Moraes & Vieira, 2022).

The transparency of these initiatives is particularly important in the context of public institutions, which must demonstrate to society how public resources are used to generate environmental, social, and economic value. In this regard, accountability tools, such as Management Reports prepared from the perspective of Integrated Reporting, become important mechanisms to demonstrate the incorporation of sustainability into institutional practices and strengthen organizational accountability (Maria et al., 2021; Moraes & Vieira, 2022; Ribeiro et al., 2024).

The analysis of this information allows us to understand not only the existence of environmental actions but also the degree to which these initiatives are integrated into the organizations' governance structures and strategic objectives. Recent studies show that the quality of the information disclosed directly influences the ability of different stakeholders to understand how institutions transform public resources into social, environmental, and academic value (Fonseca et al., 2024; Ribeiro et al., 2024).

In this context, mechanisms capable of systematically evaluating the environmental information reported by institutions become essential for strengthening accountability and governance for sustainability, helping to align institutional planning with the results actually demonstrated in accountability processes. Although the literature recognizes the importance of transparency and the disclosure of sustainability information at HEIs, approaches aimed at developing tools that allow for the objective and comparable assessment of the environmental governance reflected in Management Reports remain limited. This gap underscores the relevance of methodological proposals that assist in the systematization and analysis of this information within the context of public higher education institutions.

3 METHODOLOGY

This research is classified as applied, as it aims to generate knowledge for practical use in university management, proposing objective criteria to support the assessment of environmental governance at Federal Institutions of Higher Education (IFES) in Ceará. It is, therefore, a qualitative study, as it conducts an analytical and systematic review of these institutions' Management Reports, with the aim of proposing evaluation criteria organized on a scale, grounded in regulations, literature, and practices observed in the reports themselves (Minayo, 2012).

This study is a descriptive and exploratory research project: descriptive, because it maps the existing environmental governance practices found in the Management Reports; and exploratory, because it seeks to gain a deeper understanding of the environmental governance reported by these institutions, in addition to proposing an objective framework for evaluating the information gathered. The study employs a documentary analysis method, using Management Reports

(2020-2024) as primary data source, supplemented by a literature review to provide a theoretical foundation and establish evaluation criteria.

A literature review was conducted to gather theoretical foundations on environmental governance, institutional sustainability, and evaluation methods, covering standards, legislation, scientific articles, theses, dissertations, models, and guidelines for the preparation of Integrated Reports. At the same time, IFES institutions in Ceará were identified, and through the websites of each institution, in the “Transparency and Accountability” section, the Management Reports for the period from 2020 to 2024 were downloaded. Based on these documents, a comprehensive exploratory review was initially conducted to identify sections on environmental sustainability, as well as other aspects related to the topic throughout the reports.

Based on the principles of Integrated Reporting and regulatory frameworks related to sustainability and environmental governance in public administration, preliminary categories were established to provide an initial framework for the environmental governance practices identified in the Management Reports. The definition of these categories was not arbitrary but resulted from the integration of the concepts of materiality and value creation present in the Integrated Reporting model with recurring environmental themes found in regulations and instruments focused on institutional sustainability.

Initially, sixteen analytical categories related to environmental management were identified, covering actions in environmental education (awareness); sustainability in contracting and procurement; mitigation of greenhouse gas (GHG) emissions and climate change; energy efficiency; water use; effluent management; conservation and sustainable use of biodiversity; sustainable land use; circular economy and waste management; environmental management and pollutant emissions; proper use of hazardous products; environmental compliance; stakeholder engagement; partnerships established to promote environmental sustainability; internal controls and audits (internal and external); development and monitoring of environmental sustainability indices; and plans, programs, and strategies related to sustainability.

Subsequently, these categories were analyzed in light of the literature on sustainability in higher education institutions, environmental governance, and Integrated Reporting, with the aim of verifying their alignment with the most materially significant environmental issues and the practices actually reported by the institutions analyzed. This procedure allowed us to refine the initial set of categories and consolidate an analytical framework aimed at evaluating the environmental governance evident in the Management Reports of higher education institutions, considering aspects related to impacts on natural capital, generation of public value, and degree of institutionalization of sustainability practices.

As a complementary reference, the environmental topics outlined in GRI Standards were considered, identified by specific codes (e.g., GRI 302 - Energy; GRI 303 - Water and Effluents; GRI 304 - Biodiversity; GRI 305 - Emissions; and GRI 306 - Waste). The alignment of these topics with the materiality principles of the Integrated Reporting model helped justify the retention of the consolidated categories in the analytical framework used.

The consolidated categories and their respective supporting frameworks are presented in Table 1. It should be noted that these frameworks do not constitute the sole basis for the categories, but rather represent the main conceptual, normative, and theoretical elements used to justify their retention in the analytical framework adopted in this study. Next, an analytical review of the Management Reports was conducted to identify and classify the environmental governance practices reported by the institutions, relating them to the previously defined categories for the purposes of mapping and subsequent evaluation.

Table 1

Categories for evaluating reported environmental governance

Category	Description	Supporting Framework
Sustainable logistics	Incorporation of socio-environmental criteria into purchasing, contracts, and procurement	ABNT (2022); Sustainable public procurement; GRI 204 and GRI 308; TCU (2022)
Mitigation of Greenhouse Gas (GHG) Emissions	Emissions inventories and actions to address climate change	ABNT (2022); Climate change adaptation; GRI 305
Energy efficiency	Measures to reduce energy consumption and adopt renewable energy sources	ABNT (2022); GRI 302; TCU (2022)
Water and Effluent Management	Rational use of water, reuse, and effluent treatment	ABNT (2022); GRI 303; TCU (2022)
Conservation and sustainable use of biodiversity and soil	Conservation of ecosystems, green spaces, and natural resources	ABNT (2022); GRI 304; TCU (2022)
Waste management and pollutant emissions	Circular economy, recycling, and environmentally sound disposal	ABNT (2022); Circular economy; GRI 306; TCU (2022)
Hazardous materials management	Control of chemical substances and laboratory waste	ABNT (2022); Preventive environmental management; GRI 306; GRI 307
Environmental education and awareness	Training and awareness-raising for the academic community	ABNT (2022); GRI 404

Source: Theoretical framework and GRI (2021).

Next, a 0 to 10 scale was developed to structure an assessment tool for environmental governance at the analyzed IFES, based on their Management Reports and taking into account criteria such as existence of initiatives, definition of metrics, and establishment of targets. To verify the applicability of this proposal, a preliminary test was conducted using a set of previously mapped and categorized actions. However, given the recurring fragmentation and lack of standardization in the information presented in institutional reports - which made it difficult to classify some practices within the initially designed scale - it was determined that adjustments to the assessment tool were necessary. To preserve the instrument's objectivity, we opted to streamline the evaluation model by reducing the number of levels on the scale and tailoring the criteria to the specific characteristics of the actions under analysis. Tables 2 and 3 present the final version of the evaluation criteria adopted.

Table 2

“General” evaluation criteria

Evaluation Scale	Description
0 = None	There is no mention or evidence of the practice in the reports.
1 = Mentioned, but not implemented	The practice is mentioned, but there is no indication that it has been implemented (e.g., “Intends to carry out...”, “Was put out to bid...”, “Formed a partnership to carry out...”, “Will be carried out...”).
2 = Implemented, without metrics	The practice was implemented, but there is no quantitative data or performance metrics (e.g., “It was implemented...”, “It was put into effect...”, “It was carried out...”, “A partnership was formed with... to...”).
3 = Implemented, but targets not met	The practice was implemented with metrics or results, but there is no clarity regarding targets or the degree to which they were met (e.g., “X units were implemented...”, “Y items were executed...”, “X% was achieved...”).
4 = Executed, with targets met	The practice was carried out with defined targets that were met. The description must indicate that the result obtained was equal to or greater than what was planned. (e.g., “X% was achieved as planned...”, “The objectives were met”, or “The result achieved was better than expected...”).

Source: prepared by the authors.

Table 3

Evaluation criteria for “Institutional plans, policies, and projects”

Evaluation Scale	Description
0 = None	There is no mention or reference to the existence of any related institutional plan, policy, or project.
1 = In progress	The institution has begun developing the plan, policy, or project but has not yet finalized it (e.g., “Under construction...”, “Document under development...”, “Drafting in progress...”).
2 = Approved / Published	The plan, policy, or project has been drafted but has not yet been implemented (e.g., “Final document filed...”, “Approved by a higher authority...”, “Published on the institutional website...”).
3 = In progress	Proposal in progress, with actions already implemented, but results not yet presented (e.g., “Implementation process initiated...”, “Actions underway...”).
4 = In progress with results reported	The proposal is being implemented and has already produced measured or evaluated results (e.g., “Monitoring reports...”, “X% of objectives achieved...”, “Impact observed...”).

Source: prepared by the authors.

The new configuration of the instrument resulted in a general five-level rating scale, ranging from no actions taken (score 0) to implementation with defined targets (score 4), as shown in Table 2. In addition, the need was identified to develop specific descriptors for classifying actions related to “institutional plans, policies, and projects” (Table 3), maintaining consistency with the criteria established for “general” actions, in order to ensure a standardized evaluation process.

Notable in this dimension are actions carried out by the institution either independently or in partnership with other entities, representing both compliance with standards and legislation and a demonstration of maturity regarding environmental aspects. In general, the descriptions assigned to each level were formulated based on evidence found in the reports, taking into account terms that indicate intent, partial or full implementation of the actions, as well as the presence of metrics and/or the setting of targets. Finally, it is worth noting that all steps related to the application of the analytical tool in this study were recorded in a spreadsheet created for this purpose.

4 ANALYSIS AND DISCUSSION OF RESULTS

This study focused on higher education institutions (IFES) located in the state of Ceará. The Federal University of Ceará (UFC), headquartered in the city of Fortaleza, Ceará, was founded in 1954 and operates throughout the state of Ceará, with eight campuses located in six municipalities, making it one of the most important institutions in the country. Unilab, headquartered in Redenção, Ceará, was established in 2010 and its institutional mission is to contribute to the integration of Brazil and the other member countries of the Community of Portuguese-Speaking Countries (CPLP), especially African nations. In addition, it operates the Malês Campus in the state of Bahia. IFCE, headquartered in Fortaleza, Ceará, received this designation in 2008 following the merger of the Federal Center for Technological Education of Ceará (Cefet/CE) with federal agricultural-technical schools in the state's interior, which are affiliated with the Ministry of Education. Taking its entire history into account, this institution has existed for 114 years and is currently present in 35 municipalities in Ceará. Finally, UFCA, established in 2013, is headquartered in the municipality of Juazeiro do Norte, Ceará. Prior to its

founding legislation, it was part of the UFC structure, which, in 2001, established a medical program in southern Ceará. Currently, it has five campuses, distributed as follows: four located in the Cariri region - one of the state's most economically significant areas - and one in the south-central region of Ceará.

4.1 Mapping of environmental governance practices at state higher education institutions in Ceará

As a result of the first stage of analysis, the environmental governance practices described in the IFES Management Reports were mapped by identifying and categorizing actions related to the guidelines previously established in the methodology. Actions were assigned to categories based on an analytical review of the reports, searching for terms or descriptions of practices aligned with the defined categories. For example, references such as “installation of solar panels” or “replacement of conventional light bulbs with LEDs” were categorized as “Energy Efficiency”, while “conducting training for employees on environmental sustainability” was classified under the category “Environmental Education Initiatives (Awareness)”.

Throughout the document analysis, it was found that some of the preliminarily defined categories exhibited conceptual overlap or low frequency in the Management Reports examined. This result corroborated the need for thematic consolidation, as already anticipated in the process of refining the analytical structure, allowing for greater alignment with the practices actually reported by the institutions analyzed.

As a result, the sixteen preliminary categories were consolidated into eight final categories (as shown in Table 1): Sustainable logistics; Mitigation of greenhouse gas (GHG) emissions; Energy Efficiency; Water and Effluent Management; Conservation and Sustainable Use of Biodiversity and Soil; Waste Management and Pollutant Emissions; Hazardous Materials Management; and Environmental Education and Awareness. This consolidation sought to ensure adherence to the principles of materiality and value creation present in the Integrated Reporting model, as well as to the environmental governance and institutional sustainability frameworks adopted in the study.

It is important to note that, in some cases, categorizing the actions presented challenges due to the integrated nature of certain sustainability initiatives. For example, a practice related to water treatment could be classified under either “water use” or “effluent management”, depending on the preliminary categories. Another point worth noting concerns cross-cutting actions, such as the implementation of an “environmental sustainability index” at IFCE, which represents an initiative to measure other categories of environmental sustainability. Given this scenario, we chose to classify these practices into the categories that best suited them, seeking to maintain consistency with the institutional initiative. Furthermore, we sought to simplify the sections of the reports referring to the identified actions, while preserving the coherence of the information provided and the nature of the practices described, with the aim of contributing to the classification and evaluation stages of the IFES.

In terms of the frequency of the mapped actions, a higher incidence of actions was observed in the categories of “Waste Management and Pollutant Emissions”; “Energy Efficiency”; and “Environmental Education and Awareness”, indicating institutional prioritization of these areas. In contrast, categories such as “Mitigation of Greenhouse Gas (GHG) Emissions” and “Conservation and Sustainable Use of Biodiversity and Soil” were underrepresented in the reports.

Next, the total number of initiatives mapped in the Management Reports of Ceará's IFES institutions is presented, by definitive category, in descending order: Waste Management and Pollutant Emissions (60); Energy Efficiency (38); Environmental Education and Awareness (38); Sustainable Logistics (23); Water and Effluent Management (19); Hazardous Materials Management (17); Conservation and Sustainable Use of Biodiversity and Soil (16); Mitigation of Greenhouse Gas (GHG) Emissions (14).

4.2 Assessment of environmental governance at Higher Education Institutions in Ceará

To verify the tool's applicability, each mapped action was evaluated and assigned a score from 0 to 4, according to the criteria established in the proposed scale. To consolidate the scores in each category, the simple arithmetic mean of the scores assigned to the mapped actions was calculated. This procedure was chosen due to the exploratory nature of the instrument and the lack of theoretical or empirical evidence justifying different weightings among the analyzed categories, thereby avoiding arbitrary attributions of relevance and allowing for an evaluation focused on the quality of the report, rather than solely on the quantity of practices identified. Next, the scores for the categories related to each IFES were summed by year, yielding a percentage based on the total possible points (0 to 32), as shown in Table 5.

Drawing inspiration from the “Stages of Maturity of ESG Criteria” scale found in ABNT Recommended Practice PR 2030 (ABNT, 2022) and in order to suggest an interpretive reading of the average percentages obtained by the evaluated institutions, stages of environmental governance performance were developed, aligned with the logic of the scale used in the individual assessment of actions (ranging from 0 to 4). This interpretive scale allows for the classification of each IFES's final score into stages that represent the level of institutionalization of environmental governance practices. Thus, the proposal enables the translation of the scores obtained into a more qualitative assessment, facilitating an understanding of the degree of maturity of environmental initiatives within the institutional context. Table 4 presents the suggested performance stages and their respective score ranges.

Table 4

Stages of environmental governance performance at the IFES analyzed

Total score (0 to 32)	Percentage (%)	Stage / Description
0 to 8	Up to 25%	Initial – ranges from a complete lack of action to vague statements of intent or mentions, or actions still in development. Low level of institutionalization.
From 9 to 16	From 26% to 50%	Basic – ranges from intentions or initiatives in development to the identification of actions without metrics or those in the planning stage but not yet implemented. Institutional coordination.
From 17 to 24	From 51% to 75%	Intermediate – ranges from the identification of actions without metrics or in the planning stage without implementation to practices implemented with metrics or in progress without results. Institutional maturity.
From 25 to 32	From 76% to 100%	Adequate – ranges from implementation with established metrics to the presentation of defined goals or results (plans). Accountability.

Source: prepared by the authors.

In a relative comparison among IFES institutions, Table 5 shows that UFCA had the best average performance (46.88%), particularly in the years 2020 and 2024. The 2020 result, in particular, may be associated with the implementation of relevant initiatives, such as adherence to, implementation of, and monitoring of the Environmental Agenda for Public Administration (A3P), in addition to the monitoring of the Sustainable Logistics Plan (PLS). In contrast, Unilab achieved the lowest average percentage (32.38%), with reduced performance in 2020, a period during which it scored in only three categories.

Table 5

Overall evaluation of each IFES for the period 2020–2024

Overall Evaluation (2020–2024)	Unilab	UFC	UFCA	IFCE
2020	8.5 (26.56%)	15.87 (49.59%)	19.5 (60.94%)	15.43 (48.22%)
2021	9 (28.13%)	15.95 (49.84%)	17.5 (54.69%)	13.5 (42.19%)
2022	10.5 (32.81%)	12.5 (39.06%)	4.67 (14.59%)	9.5 (29.69%)
2023	13.33 (41.66%)	13.11 (40.97%)	14.67 (45.84%)	6.67 (20.84%)
2024	10.5 (32.81%)	12.37 (38.66%)	18.67 (58.34%)	11.17 (34.91%)
Total	10.36 (32.38%)	13.96 (43.63%)	15 (46.88%)	11.25 (35.16%)
Suggested performance level	Basic	Basic	Basic	Basic

Source: prepared by the authors.

Overall, the highest scores were recorded in “Energy Efficiency” and “Waste Management and Pollutant Emissions”, indicating that these areas are given higher institutional priority, possibly due to more immediate and measurable operational gains. In contrast, categories such as “Hazardous Materials Management” and “Conservation and Sustainable Use of Biodiversity and Soil” consistently showed low scores.

Individual temporal analysis revealed different patterns among the IFES analyzed (Table 5). Unilab showed percentage growth through 2023, followed by a decline in 2024, a year in which no actions were recorded in several categories, such as “Mitigation of Greenhouse Gas (GHG) Emissions”; “Conservation and sustainable use of biodiversity and soil”; “Management of hazardous products”; and “Environmental education and awareness.”

UFCA and IFCE recorded significant declines in 2022 and 2023, respectively, resuming growth in subsequent years. UFC, in turn, showed the smallest variation over the series, which may indicate that the institution seeks to maintain a stable minimum baseline of environmental actions. However, the lack of significant improvement in the quality of the information provided suggests a possible institutional adaptation to TCU’s guidelines for preparing Management Reports based on the Integrated Reporting model.

Overall, the results highlight the challenge of achieving the highest levels of the assessment tool due to the absence of defined targets, which weakens the presentation of information in the Management Reports. This absence suggests disconnection between planning and execution based on measurable results, indicating failure in the coordination of environmental governance.

Finally, the assessment tool proposed in this study proved satisfactory by providing an objective and quantifiable instrument for analyzing environmental governance at higher education institutions in Ceará, based on their Management Reports. By adopting a graded scale with clear criteria for evaluating environmental actions, the tool enabled a more in-depth analysis of these institutions’ accountability. The highlights of the proposal include the possibility of relative comparison among the IFES and the analysis of each institution’s evolution over time. Furthermore, the instrument values - as a criterion for high evaluation scores - the alignment of reported practices with the principles of the Integrated Reporting model, with emphasis on the presentation of metrics, targets, and results. Thus, it is concluded that the tool has the potential to identify best practices and guide the improvement of environmental governance at the institutions evaluated.

4.3 Discussion of the results

The results indicate that Ceará-based IFES institutions analyzed (UFC, Unilab, UFCA, and IFCE) still exhibit limited levels of institutionalization of environmental governance when assessed based on the categories and criteria adopted in

this study. Although initiatives related to environmental sustainability were identified at all institutions, the Management Reports analyzed show a predominance of descriptions of actions and projects, with limited use of targets, indicators, and systematic monitoring mechanisms. UFCA stands out, having shown the best average performance among the evaluated institutions, particularly due to the adoption and implementation of formal sustainability management tools, such as A3P and PLS. In general, these results suggest that sustainability is still predominantly associated with the implementation of specific actions, without robust evidence of its systematic incorporation into the institutions' strategic and decision-making processes.

This scenario aligns with recent discussions regarding the challenges of incorporating sustainability into the governance structures of higher education institutions. Although the adoption of Integrated Reporting has increased the visibility of environmental actions and strengthened accountability mechanisms, the literature indicates that the effective integration of sustainability, institutional planning, and decision-making processes remains a challenge for many organizations (Jimu & Rennkamp, 2023; Maria et al., 2021).

This result complements previous findings on the use of Integrated Reporting at Brazilian universities. Ribeiro et al. (2024) identified progress in the disclosure of institutional information and in adherence to the reporting model's guidelines. However, the results of this study suggest that, when focusing specifically on the dimension of environmental governance, challenges remain regarding the definition of targets, indicators, and monitoring mechanisms capable of objectively demonstrating the results of the actions implemented. Thus, the findings indicate that improvements in the overall quality of reporting do not necessarily translate into higher levels of institutionalization of environmental governance. In this regard, the fragmentation observed in some of the reports analyzed may indicate difficulties in consolidating an integrated approach to sustainability, especially with regard to the alignment between strategic objectives, performance indicators, and achieved results.

A temporal analysis of the results also revealed distinct patterns among the evaluated institutions. While UFC showed more modest variations over the analyzed period, UFCA and IFCE recorded more pronounced fluctuations in certain years, followed by subsequent recovery. Unilab, on the other hand, showed gradual growth through 2023, followed by a decline in 2024. Although the Management Reports do not allow for the identification of the causes of these trends, such variations may reflect differences in institutional capacity to systematize, monitor, and report environmental information over time - an aspect directly related to the quality of accountability processes.

Another relevant aspect concerns the uneven distribution of reported practices across the different categories analyzed. Topics such as energy efficiency and waste management were reported more frequently and featured in more initiatives, while categories related to the mitigation of greenhouse gas (GHG) emissions, biodiversity conservation, and sustainable land use were less frequently highlighted. This result may indicate that institutions are paying greater attention to actions whose operational and economic benefits are more readily observable. Furthermore, recent studies have identified low levels of disclosure of information related to biodiversity and climate change at HEIs, both nationally and internationally (Hassan et al., 2025).

From the perspective of Integrated Reporting and the principle of materiality, the limited coverage of topics of high environmental materiality may limit the ability of reports to comprehensively demonstrate the positive and negative impacts of organizations on natural capital. Given that value creation is understood as a process involving different forms of capital and multiple stakeholders, the absence of information related to environmental risks, climate targets, or biodiversity conservation tends to limit the quality of accountability and institutional transparency (Marçal et al., 2022; Maria et al., 2021).

The results also showed that setting targets and indicators remains one of the main challenges for strengthening environmental governance at the IFES analyzed. In several cases, ongoing environmental initiatives were identified, but they lacked clear parameters to track their progress or evaluate their results over time. This finding reinforces the importance of monitoring and evaluation mechanisms for consolidating sustainability as a permanent element of institutional management. In this context, the tool proposed by this study aims to contribute to the systematization of environmental governance analysis, offering criteria that enable greater comparability among institutions and support planning, monitoring, and accountability processes.

In addition to the results obtained for the institutions analyzed, the findings demonstrate the usefulness of the proposed tool as an instrument to support the assessment of environmental governance as reflected in the IFES Management Reports. Unlike approaches focused exclusively on measuring environmental performance or the overall quality of the reports, the model developed seeks to integrate criteria related to materiality, the institutionalization of practices, and the capacity to monitor results. Thus, the tool makes it possible to identify not only the existence of environmental initiatives but also the extent to which these initiatives are incorporated into the institutions' management, planning, and accountability processes.

In this regard, the results obtained indicate that the application of the tool made it possible to differentiate levels of development in the practices reported by the institutions and to identify critical areas for improvement, thereby helping to fill a gap identified in the literature regarding the availability of instruments aimed at the systematic assessment of environmental governance as evidenced in the Management Reports of Brazilian IFES.

5 CONCLUSIONS

This study proposed a tool to support the assessment of environmental governance as reflected in the Management Reports of higher education institutions in Ceará for the period from 2020 to 2024. To this end, three main steps were carried out: mapping the environmental governance practices described in the reports of each IFES; constructing an evaluation scale with objective descriptors; and applying this tool to analyze the environmental governance reflected in the institutions' Management Reports.

The mapping resulted in the systematization of various initiatives organized into categories, revealing a predominance of descriptive and isolated reports, which confirms a tendency toward fragmentation in the information presented. The development of a 0-to-4 scale made it possible to classify practices according to different levels of compliance, highlighting the scarcity of defined metrics and targets. This result may indicate limitations in the institutionalization and documentation of environmental governance practices, particularly with regard to the definition of targets, indicators, and monitoring mechanisms.

From a managerial perspective, the results suggest the need to strengthen the systematization and monitoring of environmental practices, especially in areas of high environmental materiality. In the context of public policy, they reinforce the importance of institutional guidelines capable of increasing transparency and standardizing the reporting of environmental practices at IFES.

The proposed tool offers significant contributions. First, it provides public managers with support for the institutional decision-making process by enabling the identification of areas with low visibility or lower degree of institutionalization of environmental practices. Furthermore, it facilitates benchmarking among public higher education institutions, promoting comparisons of the level of disclosure and institutionalization of environmental practices among institutions with similar characteristics, which contributes to the dissemination of best practices and the identification of common weaknesses. Finally, it has the potential to improve accountability by aligning with the guidelines of the Integrated Reporting model, thereby reinforcing transparency, accountability, and a focus on generating public value.

The results complement previous research on Integrated Reporting at Brazilian universities by directing the analysis toward environmental governance, highlighting the need for more structured mechanisms for monitoring, evaluating, and disseminating results in this specific dimension of institutional management. Furthermore, they contribute to advancing discussions on environmental governance at IFES by offering a tool applicable to the systematic analysis of environmental information reported in Management Reports.

The exclusive use of Management Reports is consistent with the study's objectives, as they represent the primary formal instrument of transparency and accountability for IFES. Thus, the absence of a particular practice in the institutional report may indicate a weakness in accountability, even if its operational existence cannot be ruled out. For this reason, the results should be interpreted as an assessment of the information reported by the institutions and do not constitute a direct verification of the effective implementation of the described environmental practices. Although the documentary analysis involves an interpretive component, the adoption of standardized descriptors, the systematic recording of evidence, and the independent evaluation of the classification by more than one researcher - followed by consensus among the authors - sought to ensure greater analytical consistency. It is recognized, however, that the method and robustness of the tool can be enhanced through expert evaluation, consistency tests, reliability procedures, and analytical alternatives - such as the weighting of indicators - as well as by incorporating interviews and observations for comparative purposes.

Finally, it is important to reinforce the strategic role of environmental governance, still often treated as a secondary concern, especially in the public sector - where it is sometimes criticized for its ability to create public value. By offering a practical and objective tool for the systematic analysis of environmental governance as reflected in Management Reports, this research contributes to strengthening institutional sustainability and improving accountability in Brazilian IFES.

REFERENCES

- Adams, C., Borges, Z., Moretto, E. M., & Futeima, C. (2020). Governança ambiental no Brasil: acelerando em direção aos objetivos de desenvolvimento sustentável ou olhando pelo retrovisor?. *Cadernos Gestão Pública e Cidadania*, 25(81). <https://doi.org/10.12660/cgpc.v25n81.81403>
- Associação Brasileira de Normas Técnicas (ABNT) (2022). *PR 2030: Ambiental, social e governança (ESG) – Conceitos, diretrizes e modelo de avaliação e direcionamento para organizações*. Rio de Janeiro: ABNT.
- Brasil (1988). *Constituição da República Federativa do Brasil de 1988*. Brasília, DF: Presidência da República.
- Brasil (1992). *Lei nº 8.443, de 16 de julho de 1992: Dispõe sobre a Lei Orgânica do Tribunal de Contas da União e dá outras providências*. Diário Oficial da União.
- Brasil (2017). *Decreto nº 9203, de 22 de novembro de 2017. Dispõe sobre a política de governança da administração pública federal direta, autárquica e fundacional*. Diário Oficial da União.
- Buta, B., Teixeira, M., & Schurgelies, V. (2018). *Accountability* nos atos da administração pública federal brasileira. *Revista Pretexto*, 19(4), 46-62. <https://doi.org/10.21714/pretexto.v19i4.5715>

- Eck, C. V., & Nel, C. (2015). *Reporte integrado: A ponta do iceberg*. The Institute of Internal Auditors. https://portal.tcu.gov.br/uploads/Reporte_Integrado_A_ponta_do_iceberg_min_a9703aa306.pdf
- Fonseca, M. M. L., Ribeiro, C. D. M. D. A., & Cosenza, J. P. (2024). Qualidade da informação dos relatórios de gestão integrados das universidades públicas federais. *Pensar Contábil*, 25(88).
- Girardi, J., & Torres, R. (2024). A operacionalização da política de governança na Administração Pública federal. *Revista Ciência em Evidência*, 4(2), e0230013. <https://doi.org/10.47734/rce.v4i2.2525>
- Global Reporting Initiative (GRI) (2021). *GRI Standards*. <https://www.globalreporting.org/standards/>
- Hassan, A., Adhikari Parajulim, M., Roberts, L., & Atif, S. (2025). Measuring the relationship between reporting on biodiversity actions and its determinants to achieve SDGs: Insights from UK higher education institutions (HEIs). *Meditari Accountancy Research*, 33(5–6), 1329–1367. <https://doi.org/10.1108/MEDAR-01-2024-2323>
- International Integrated Reporting Council (IIRC) (2021). *Estrutura internacional para o relato integrado*. <https://integratedreporting.ifrs.org/wp-content/uploads/2024/04/Framework-IR-Portugues-26fev.pdf>
- Jacobi, P. R., & Sinisgalli, P. A. A. (2012). Governança ambiental e economia verde. *Ciência & Saúde Coletiva*, 17(6), 1469–1478. <https://doi.org/10.1590/S1413-81232012000600011>
- Jimu, T., & Rennkamp, B. (2023). Science to practice – networked governance of sustainability transitions in an African university. *International Journal of Sustainability in Higher Education*, 25(9), 19–39. <https://doi.org/10.1108/IJSHE07-2023-0317>
- Marçal, A. S. V., Neumann, M., & Sanches, S. L. R. (2022). Relato integrado e a geração de valor: A semântica do conceito fundamental do relato integrado. *Organizações & Sociedade*, 29, 449–480. <https://doi.org/10.1590/1984-92302022v29n0021PT>
- Maria, S. C., D'Angelo, M. J., & Borgerth, V. M. da C. (2021). Lacunas de engajamento e utilização do relato integrado no Brasil. *Revista Contabilidade & Finanças*, 33, 63–80. <https://doi.org/10.1590/1808-057x202112040>
- Martins, A. P. A., Laranja, L. S., Lucio, M. L., & Grin, E. J. (2022). Sentidos e usos da governança pública na Administração Pública brasileira: Análise do discurso das diretrizes do Tribunal de Contas da União e do Decreto 9.203/2017. *XLVI Encontro Nacional da Associação Nacional de Pós-Graduação e Pesquisa em Administração*, Curitiba, Brasil. <https://anpad.com.br/uploads/articles/120/approved/c20bb2d9a50d5ac1f713f8b34d9aac5a.pdf>
- Minayo, M. C. S. (2012). Análise qualitativa: teoria, passos e fidedignidade. *Ciência & Saúde Coletiva*, 17(3), 621–626. <https://doi.org/10.1590/S1413-81232012000300007>
- Moraes, M. P. & Vieira, J., Neto. (2022). A importância do Relatório Integrado nas Universidades Públicas. *Revista Práticas em Gestão Universitária*, 6(1), 4-14.
- Ribeiro, C. D. M. D. A., Moraes, M. P., Pinheiro, A. B., & Neto, J. (2024). Quality of Integrated reports: Evidence from Brazilian public universities. *Social Responsibility Journal*, 20(1), 164–179. <https://doi.org/10.1108/SRJ-09-2022-0358>
- Tribunal de Contas da União (TCU) (2018). *Decisão Normativa nº 170, de 19 de setembro de 2018: Dispõe acerca das unidades cujos dirigentes máximos devem prestar contas de suas gestões ocorridas no exercício de 2018 e dá outras providências*. Diário Oficial da União.
- Tribunal de Contas da União (TCU) (2020). *Instrução Normativa TCU nº 84, de 22 de abril de 2020: Estabelece normas para a tomada e prestação de contas dos administradores e responsáveis da administração pública federal, para fins de julgamento pelo TCU*. Diário Oficial da União.
- Tribunal de Contas da União (TCU) (2022). *Relatório de gestão: guia para elaboração na forma de relato integrado (3ª ed.)*. Tribunal de Contas da União.

CONTEXTUS

CONTEMPORARY JOURNAL OF ECONOMICS AND
MANAGEMENT.

ISSN 1678-2089

ISSNe 2178-9258

1. Economics, Administration and Accounting - Journal
2. Federal University of Ceará. Faculty of Economics,
Administration, Actuaries and Accounting

FACULTY OF ECONOMICS, ADMINISTRATION, ACTUARIES AND ACCOUNTING

University Av. – 2486, Benfica
60020-180, Fortaleza-CE

BOARD: Carlos Adriano Santos Gomes Gordiano
José Carlos Lázaro da Silva Filho

ADMINISTRATIVE AND PUBLISHING SUPPORT

Heloísa de Paula Pessoa Rocha (UFC)

Website: www.periodicos.ufc.br/contextus

E-mail: revistacontextus@ufc.br



EDITOR-IN-CHIEF

Diego de Queiroz Machado (UFC)

ASSOCIATE EDITORS

Adriana Rodrigues Silva (IPSantarém, Portugal)
Alessandra de Sá Mello da Costa (PUC-Rio, Brazil)
Allysson Alex Araújo (UFCA, Brazil)
Andrew Beheregarai Finger (UFAL, Brazil)
Armando dos Santos de Sousa Teodósio (PUC-MG, Brazil)
Brunno Fernandes da Silva Gaião (UEPB, Brazil)
Carlos Enrique Carrasco Gutierrez (UCB, Brazil)
Carolina Redolfi (Brookes University, England)
Cláudio Bezerra Leopoldino (UFC, Brazil)
Elionor Farah Jreige Weffort (FECAP, Brazil)
Ellen Campos Sousa (Gardner-Webb University, USA)
Gabriel Moreira Campos (UFES, Brazil)
Georgette Andraz (UALg, Portugal)
Guilherme Jonas Costa da Silva (UFU, Brazil)
Hernan Palau (UBA, Argentina)
Iván Godoy-Flores (UTA, Chile)
Jesús Barrena Martínez (UCA, Spain)
Jorge de Souza Bispo (UFBA, Brazil)
Leonor Vacas de Carvalho (UEvora, Portugal)
Manuel Aníbal Silva Portugal e Vasconcelos Ferreira (IPLeiria, Portugal)
Manuel Castelo Branco (UP, Portugal)
Márcia Zabdiele Moreira (UFC, Brazil)
Marcos Cohen (PUC-Rio, Brazil)
Marcos Ferreira Santos (Universidad de La Sabana, Colombia)
Mariluce Paes-de-Souza (UNIR, Brazil)
Miguel Ysrael Ramírez-Sánchez (UAEMéx, Mexico)
Minelle Enéas da Silva (University of Manitoba, Canada)
Nuno Manuel Rosa dos Reis (IPLeiria, Portugal)
Pedro Jácome de Moura Jr. (UFPB, Brazil)
Pedro Verga Matos (ISEG, Portugal)
Rafael Fernandes de Mesquita (IFPI, Brazil)
Rosimeire Pimentel (UFES, Brazil)
Sonia Maria da Silva Gomes (UFBA, Brazil)
Susana Jorge (UC, Portugal)

EDITORIAL BOARD

Ana Sílvia Rocha Ipiranga (UECE)
Conceição de Maria Pinheiro Barros (UFC)
Danielle Augusto Peres (UFC)
Diego de Queiroz Machado (UFC)
Editinete André da Rocha Garcia (UFC)
Emerson Luís Lemos Marinho (UFC)
Eveline Barbosa Silva Carvalho (UFC)
Fátima Regina Ney Matos (ISMT, Portugal)
Mario Henrique Ogasavara (ESPM)
Paulo Rogério Faustino Matos (UFC)
Rodrigo Bandeira-de-Mello (FGV-EAESP)
Vasco Almeida (ISMT, Portugal)

SCIENTIFIC EDITORIAL BOARD

Alexandre Reis Graeml (UTFPR)
Augusto Cezar de Aquino Cabral (UFC)
Denise Del Pra Netto Machado (FURB)
Ednilson Bernardes (Georgia Southern University, USA)
Ely Laureano Paiva (FGV-EAESP)
Eugenio Ávila Pedrozo (UFRGS)
Francisco José da Costa (UFPB)
Isak Kruglianskas (FEA-USP)
José Antônio Puppim de Oliveira (UCL)
José Carlos Barbieri (FGV-EAESP)
José Carlos Lázaro da Silva Filho (UFC)
José Célio de Andrade (UFBA)
Luciana Marques Vieira (UNISINOS)
Luciano Barin-Cruz (HEC Montréal, Canada)
Luis Carlos Di Serio (FGV-EAESP)
Marcelle Colares Oliveira (UFC)
Maria Ceci Araujo Misoczky (UFRGS)
Mônica Cavalcanti Sá Abreu (UFC)
Mozar José de Brito (UFL)
Renata Giovinnazzo Spers (FEA-USP)
Sandra Maria dos Santos (UFC)
Walter Bataglia (MACKENZIE)



Contextus agrees and signs the San Francisco
Declaration on Research Assessment (DORA).



Contextus is associated with the Brazilian
Association of Scientific Editors.



This work is licensed under a Creative Commons
Attribution - NonCommercial 4.0 International
license.