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THE ROLE OF PUBLIC UNIVERSITIES IN BUILDING MANAGEMENT FOR SUSTAINABILITY AND INTEGRATION OF THE SUSTAINABLE DEVELOPMENT GOALS: CASE STUDY IN RIO GRANDE DO NORTE (RN)[1]

O PAPEL DAS UNIVERSIDADES PÚBLICAS NA CONSTRUÇÃO DE UMA GESTÃO PARA SUSTENTABILIDADE E INTEGRAÇÃO DOS OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL: ESTUDO DE CASO NO RIO GRANDE DO NORTE (RN)

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ABSTRACT

Faced with the scenario of climate change and other negative impacts that involve the lack of sustainability in organizations, global society is now being asked to raise greater awareness of these issues. Based on this, this research seeks to understand how the Sustainable Development Goals (SDGs) have been developed in the practical context of public universities in Rio Grande do Norte (RN) through the analysis of management practices for sustainability highlighted in the management documentation of these universities. For this, qualitative research was carried out, the data was scripted using a checklist and analyzed using content analysis. So, by being able to list these practices, it was possible to correlate them with the 17 SDGs. The most related SDGs were: 8, 3 and 16. They concern, respectively, decent work and economic growth; health and well-being; and peace, justice and effective universities. Therefore, this study was able

to verify that some of the management practices that are aligned with one or more dimensions of sustainability are directly related to one or more SDGs.

Keywords: management practices, sustainability, universities, sustainable development goal.

RESUMO

Diante o cenário de mudanças climáticas e outros impactos negativos que envolvem a falta de sustentabilidade nas organizações, a sociedade global passou a ser cobrada por uma conscientização maior por essas questões. A partir disso, esta pesquisa busca entender como os Objetivos de Desenvolvimento Sustentável (ODS) vem sendo desenvolvidos no contexto prático das universidades públicas do Rio Grande do Norte (RN) através da análise das práticas de gestão para sustentabilidade apontadas na documentação gerencial dessas universidades. Para isso, foi realizada uma pesquisa qualitativa, os dados foram roteirizados através de um *checklist* e analisados por meio de uma análise de conteúdo. Então, ao conseguir listar essas práticas, foi possível correlacioná-las com os 17 ODS. Os ODS mais relacionados foram: 8, 3 e 16. Eles dizem respeito, respectivamente, ao trabalho decente e crescimento econômico; saúde e bem-estar; e, paz, justiça e universidades eficazes. Logo, esse estudo conseguiu verificar que algumas das práticas de gestão que possuem alinhamento com uma ou mais dimensão da sustentabilidade se relacionam diretamente com um ou mais ODS.

Palavras-chave: práticas de gestão, sustentabilidade, universidades, objetivos do desenvolvimento sustentável.

INTRODUCTION

In light of climate change and socio-environmental catastrophes that are occurring with increasing frequency, global society has become progressively more concerned with sustainability. This term has been widely disseminated and has come to guide public debates at both national and international levels. Consequently, global society has sought balanced development, incorporating sustainability across multiple areas and sectors, such as macroeconomics and microeconomics, at global and local levels, within political-institutional spheres, and in the private market (Dias, 2019; Barbieri, 2016).

Accordingly, international literature has created and disseminated several theories and solutions for integrating sustainability within organizations, such as the Triple Bottom Line (TBL). In this model, sustainability is structured into three dimensions: economic, social, and environmental. The first dimension refers to a concept that is well established in companies, as it relates to profit generation, which is the primary objective of for-profit organizations. However, due to changes in society, the other dimensions also require balance; that is, human and natural capital must be aligned with economic capital (Barbieri; Cajazeira, 2016).

Typically, greater emphasis within the TBL framework is placed on the environmental dimension when compared to the other two. Nevertheless, the economic and social dimensions must also be studied, as there is a gap in the literature in this regard (Lourenço; Carvalho, 2013). It should also be noted that the economic dimension seeks eco-efficiency, that is, an increase in production efficiency with reduced resource use, without neglecting profit generation (Nascimento, 2012). In the context of public management, adequate and efficient allocation of financial resources must be considered (Costa, 2021).

In the social dimension, the emphasis is on citizens, respecting human rights and equal opportunities. This refers to a context of social integration, that is, what allows individuals within an organization or nearby locality the opportunity for a full and more inclusive life (Nascimento, 2012; Santana; Amâncio-Vieira; Favoreto, 2018).

For a long time, productive efficiency was what mattered most in organizations, especially in companies. However, due to the scarcity of natural resources and behavioral changes in society, there arose a need for environmental legislation for regulation and for management oriented toward socio-environmental demands. Thus, Environmental Management (EM) emerged

to minimize negative impacts on nature and society, reduce pollutants and waste, and decrease legal implications such as fines (Vieira; Silva, 2020).

In public organizations, legitimacy and legislation are always present, as they reflect the society that is desired. Given this influence on a country's culture, the implementation of management aimed at sustainability produces the legitimization of the actions of these entities and their managers (Vieira; Silva, 2020). It is also noteworthy that the mission to defend and preserve the environment is established in the 1988 Constitution, which in Article 225 states that this responsibility lies with both the Public Authorities and society as a whole (Brazil, 1988).

From this perspective, considering that Public Administration is largely responsible for its resources, it has the capacity to develop socio-environmental programs. Indeed, the implementation of such programs is necessary, as they have effects on society and, especially, on federal financial resources, contributing to cost reduction and the optimization of activities.

Turning to public Higher Education Universities (HEIs), in addition to the aforementioned effects, these institutions play the role of shaping the opinions of countless citizens, which helps expand and perpetuate sustainability among individuals and other universities. Despite the importance of this role and the dissemination of studies focused on this issue, challenges still exist in implementing a sustainable culture (Gazzoni et al., 2018). Thus, these universities have a strategic role in the implementation and dissemination of Environmental Management in the pursuit of sustainability, with a focus on policies and actions for the academic community, whether individually or through partner networks, in order to integrate the local society that maintains a direct relationship between HEIs and regional planning (Pantaleão et al., 2018).

As a way to intensify these actions and also as a global metric, the Sustainable Development Goals (SDGs), created in 2015 by the United Nations

(UN) through the 2030 Agenda, comprise 17 goals and 169 targets. The intention is for these goals to be adopted across a wide range of institutional scales, including economic blocs, countries, states, regions, companies, the third sector, and government agencies. Within organizations, especially businesses, they can be applied at all levels, from operational to strategic (Schio et al., 2019).

In HEIs, the effects of the SDGs can be developed across their three pillars - teaching, research, and extension - as well as in their management. Thus, the SDGs can be integrated into the development of academic research, applied through teaching - bringing knowledge and quality to the training of more conscious professionals and citizens - through extension activities, in a more practical way, by incorporating sustainability into the local community, and finally into management, since all agents involved play a significant role in implementing the SDGs through their activities within HEIs (Sousa; Rodrigues; Cançado, 2019).

In the Brazilian context, a dichotomy can be observed among public HEIs, as despite their role as research institutions and providers of professional and civic education, most of their management practices are not aligned with sustainability practices. Therefore, it is emphasized that HEIs go beyond teaching, research, and extension, as they also have administrative and operational demands. Consequently, there is a need to align teaching, research, and extension with HEI management, reducing negative impacts and waste (Zeitone et al., 2019).

Castro et al. (2020), in one of their studies, address HEIs in Brazil's Northeast region. According to the authors, this region is the one most in need of integrating sustainability across all its pillars, as it contains the HEIs with the lowest sustainability indices in Brazil. Therefore, this study seeks to better understand this scenario in practice, from the perspective of public HEIs in the state of Rio Grande do Norte (RN).

Thus, in order to understand how the Sustainable Development Goals (SDGs) have been developed in the practical context of public universities in Rio Grande do Norte (RN), through the analysis of sustainability management practices identified in the managerial documentation of these universities, the following research question arises: How are sustainability management practices associated with the Sustainable Development Goals in public universities in the state of Rio Grande do Norte (RN)?

THEORETICAL FRAMEWORK

From the perspective adopted in this work, this section proposes to explore it through three topics. Starting with management for sustainability, through the main concepts and tools used in universities, followed by the 2030 Agenda through its relationship with sustainable management in the context of universities, and finally, it addresses sustainability in higher education universities, highlighting the practices and challenges of sustainable management in universities, mainly in the Brazilian scenario.

Management for sustainability

It is observed that from the 1970s onward, society changed its way of thinking, especially with regard to socio-environmental issues; consequently, pressures for organizational sustainability have increased. This pressure comes both from the public/beneficiaries of these organizations and from legislation. However, changes within organizations have also been occurring internally, as managers seek to minimize negative impacts on the environment. In addition to socio-environmental practices, the operationalization of sustainability can take place through Environmental Management (EM) (Barbieri, 2016).

According to Barbieri (2016), any type of management requires instruments, understood as tools or means used to achieve objectives. Examples

of management instruments include PDCA, failure analysis, checklists, the 5S method, scatter diagrams, among others. Specifically in the context of Environmental Management, examples include environmental management systems, environmental impact assessments, environmental audits, environmental reports, environmental risk management, and environmental education, among others.

In Brazilian government agencies, according to Vieira and Silva (2020), Environmental Management is guided by the Environmental Agenda in Public Administration (A3P), which has become a program aimed at developing a new organizational culture. Although adherence to A3P is not mandatory, it has gained increasing acceptance, especially since it is grounded in current socio-environmental legislation.

Revisiting sustainable practices in Public Administration, despite the Brazilian government's efforts to comply with UN agreements and its policy of socio-environmental preservation of national territory, few projects and policies have actually been adopted, as most measures are voluntary. Only the Sustainable Logistics Management Plan (SLMP) is mandatory; however, the penalties for non-compliance are mild. In most cases, projects are developed merely to meet existing legal requirements (Silva; Bahia, 2019).

According to Maruyama, Trigo, and Trigo (2022), the SLMP is a management tool, essentially for planning, that enables the establishment of sustainability practices in each public agency, including public HEIs. This instrument serves to guide, disseminate, train, and raise awareness within the community regarding socio-environmentally appropriate actions, plans, and practices. Each public university must present this document, in accordance with the provisions of Normative Instruction No. 10/2012, which also establishes the deadline for submission of this plan.

Considering environmental management and the tools that can be integrated within Brazilian HEIs, the next section addresses the concept and application of the 2030 Agenda in HEIs, with the aim of guiding these institutions in building more sustainable management practices.

2030 Agenda

The 2030 Agenda was created in 2015 by the United Nations (UN) and represents a continuation of the Millennium Development Goals (MDGs), also established by the UN, whose eight objectives were to be achieved between 2000 and 2015. These MDGs aimed to eradicate hunger, reduce child mortality, combat serious diseases, promote gender equality, ensure environmental sustainability, among other goals (United Nations, 2015).

Building on this, the 2030 Agenda was developed by the 193 UN Member States, based on discussions generated by the Millennium Challenge and the Rio-92 Conference. This agenda seeks to promote actions that foster economic development, preserve the environment, and ensure social commitment - especially toward eradicating hunger - by 2030. It comprises 17 goals, with 169 associated targets (United Nations, 2015; Zeitone et al., 2019).

In addition to SDG 17, it is noteworthy that within the 2030 Agenda, several targets - particularly those under SDG 4 - are related to higher education. This shift is significant, as basic education has been the primary focus of UN documents and regulations, such as those related to the Millennium Development Goals. Consequently, higher education has gained greater importance as a factor for socio-environmental development. Therefore, whether for political reasons, sustainability considerations, or the urgencies brought about by the pandemic context, the implementation of the SDGs in higher education should not be neglected (Fioreze, 2022).

The following section discusses how HEIs develop sustainability based on the literature, with particular emphasis on how the SDGs are being applied in this context.

Sustainability in higher education institutions

In the international context, practices and research on environmental sustainability in HEIs have been recorded since the 1990s. One of the first documents reflecting this commitment to sustainability in higher education is the Talloires Declaration, in which 350 university presidents from more than 40 countries, gathered in France, committed themselves to this agenda. Since then, new measures and projects of this nature have been adopted and supported, including in Brazil (Rohrich; Takashi, 2019).

In Brazil, Silva and Bahia (2019) identified that the role of HEIs in the sustainability process is inherent to their function as institutions that educate citizens and professionals, as well as to their own management, by proposing actions that either prevent or mitigate the socio-environmental impacts generated by the institutions themselves. Therefore, to place HEIs at the service of sustainability, it is necessary to change their institutional structures, provide space for study themes focused on socio-environmental issues, update their theoretical frameworks and methodologies, and, above all, promote awareness within the academic community and its surroundings regarding the importance of building a more sustainable world.

However, some universities are unable to fully implement Environmental Management. In this regard, Drahein, Lima, and Costa (2020), in their study, identified that sustainability indicators in HEIs may have flexible inclusions, but must be anchored in the three pillars (economic, social, and environmental). For each pillar, there are common indicators in these universities: economic - energy,

green investments, and green procurement; environmental - water, land, waste, and biodiversity; social - occupational health and safety.

As a way to further understand sustainable practices, Lugoboni and Marques (2022) identified sustainability practices commonly found in Brazilian HEIs, based on national literature. The authors identified 23 sustainability actions and 31 related to governance mechanisms; however, it was observed that the actions were largely autonomous, and those defined by the Rector's Office were disconnected from the day-to-day activities of managers. Thus, difficulties in implementing sustainable actions on the part of managers were evident.

Because HEIs are open systems with multiple stakeholders, Fernandes (2019) argues that communication and the university (administration) must be aligned and treated as inseparable aspects of management. With regard to sustainability, action can take place across the various axes of HEIs. These axes can be understood as the university tripod - teaching (education and training), research (social management of knowledge), and extension (social engagement) - together with management (a responsible campus).

In the pursuit of implementing the goals and targets of the 2030 Agenda, Fleig, Nascimento, and Michaliszyn (2021) point out that, as methodologies, HEIs need to promote broad population inclusion, critical reflection on the principles of sustainability, and the organization of teaching–learning projects involving all stakeholders (students, faculty, and management). These authors further suggest that multi-, trans-, and interdisciplinary approaches will enhance sustainable development actions in the academic context, alongside the initiatives of professors and managers.

Several studies have sought to identify the relationship between sustainability and the SDGs in the context of HEIs. This is the case of Sousa, Rodrigues, and Cançado (2019), who, through Times Higher Education (THE), presented contributions related to research, teaching, extension, and

management in HEIs. Similarly, Caetano and Lugoboni (2022) identified the following themes as recurrent in the indicators used to monitor institutional services: materials; energy consumption and generation; water consumption; biodiversity; emissions; effluents and waste; environmental assessment of suppliers; employment-related social indicators; occupational health and safety; and training and education-related social indicators. Subsequently, the authors observed that these indicators and their themes are related to 13 of the 17 SDGs. In other words, a cross-analysis of this information was achieved, demonstrating that HEIs should integrate sustainability through their management models.

This allows one to infer the relevance of integrating the HEI tripod, institutional management, and the SDGs in order to promote sustainability. Evidently, there are numerous challenges to this implementation, as previously mentioned. The following section presents the methods employed in this research.

MHETOD

Due to its proposed objective, this research qualifies as descriptive and qualitative. Regarding the technical procedures to be used, this work is characterized as documentary research. This type of research utilizes materials that have not been analyzed, or at least not in accordance with the research objective, to understand the phenomenon (Gil, 2009). Therefore, the research is divided into five stages, as shown in Figure 1.

FigurE 1 – Research stages
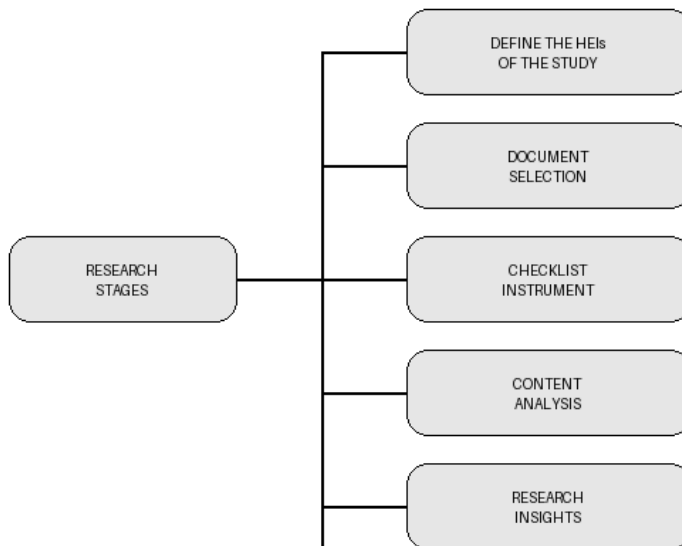
As the object of study, this research proposes to analyze the management documents of public HEIs in the state of Rio Grande do Norte. According to the National Registry of Higher Education Courses and Institutions (e-MEC Registry), there are three public HEIs in the state, all of which develop the higher education tripod (teaching, research, and extension). Among them, one is a state institution and two are federal institutions, which in this study are referred to respectively as "HEI A," "HEI B," and "HEI C."

Regarding the documents analyzed, the following selection criteria were adopted: open access - that is, availability on the official websites of these universities - and the most up-to-date documents, considering that data collection was carried out in April 2023, as shown in Chart 1. Thus, the following documents were identified: Institutional Development Plans (IDPs), which establish the guidelines and strategy of the HEI; Sustainable Logistics Management Plans (SLMPs), which are strategic instruments focused on the organization's socio-

environmental strategies; and Management Reports (MRs), which provide information and accountability regarding the actions carried out by the institution's management over a given period. It should be noted that HEI A does not present an SLMP, since this document is mandatory only at the federal level, and this university is a state institution. Therefore, this document was not included, as it is not produced by that institution.

Chart 1 – Description of analyzed documents

Documents	Information	HEI A	HEI B	HEI C
IDP	Year of publication	2016	2021	2021
	Data validity	2016-2026	2020-2029	2020-2029
SLMP	Year of publication	Not applicable	2021	2021
	Data validity		2021-2023	2021-2023
MR	Year of publication	2022	2021	2022
	Data validity	2021-2022	2021	2021

Source: Elaborated by authors (2024).

The data from this research will be compiled using a checklist. This instrument will serve as a resource for filtering the data, like a roadmap, allowing for the evaluation of common or divergent themes and points among the universities; however, it will not be the data collection instrument itself. Because it deals with sustainability practices in universities, it presents blocks with categories and their possible dimensions, as shown in Chart 2.

Quadro 2 – Blocos do *checklist*

Blocks	Category	Dimensions
Block I	Documents profile	Not applicable
Block II	Characterization of university	Not applicable
Block III	Management practices for Sustainability	Environmental
		Economic
		Social
		Educational
		Management for Sustainability
Block IV	Sustainable development goals	Not applicable

Source: Elaborated by authors (2024).

This instrument was developed based on the theoretical framework that served as a reference for this study. The main guiding sources for its construction were as follows: regarding the structure and thematic approach, the works of

Barbieri and Cajazeira (2016) and Dias (2019); with respect to sustainability management practices, the studies by Lugoboni and Marques (2022); and concerning institutional missions and sustainability in public HEIs, the studies by Freitas et al. (2019), Castro et al. (2020), Fernandes (2019), and Pantaleão (2018).

In this context, given the large volume of material available in communication media, Gil (2009) recommends content analysis as a technique for data analysis. Accordingly, several readings of the documents were conducted, followed by data filtering using the checklist. Subsequently, the checklist items and their responses were categorized according to the research objectives. Finally, the documents were analyzed through the synthesis of the information obtained.

RESULTS AND DISCUSSION

In order to begin the analysis of sustainability management practices and relate them to the SDGs, as identified in the managerial documentation of public HEIs in the state of Rio Grande do Norte (RN), the presentation of the results will be structured as follows: (i) characterization of the profile of the public HEIs; (ii) presentation of sustainability-related aspects found in the organizational philosophy of these universities; (iii) presentation of data regarding the explicit commitment of HEI management to sustainability, the 2030 Agenda, and its SDGs; (iv) classification of management practices according to sustainability dimensions and certain educational aspects; and (v) exposition of the direct relationships between the identified practices and the SDGs.

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Characterization of RN public universities

The data below was collected by completing the checklist based on available documents, especially the MR and IDP. Chart 3 summarizes this information and allows for a comparison of the profiles of these universities.

Chart 3 – Block II – Characterization of RN public universities

ITEM FOR ANALYSIS	HEI A	HEI B	HEI C
Year of University Creation	1968 – Founded as a union of municipal colleges; 1987 – State-run	1958	Founded as a higher education institution; 1967 – Federalized; 2005 – Federalized.
Number of University Campuses	1 central campus, 5 advanced campuses and 15 on-site support centers.	5 campuses, one central and 4 in the interior, plus 16 on-site support centers.	4 campuses, one central and 3 in other cities, plus 8 on-site support centers.
Geographic Location of the UNI Central Campus/Region of the State	RN / Potiguar West	RN / Capital	RN / Potiguar West
Administrative Category	State-run	Federal	Federal
Academic Organization	University	University	University
Number of Staff (Administrative Technicians)	666	2983	530
Number and Qualifications of Faculty Members	2021: 787 professors, with 85% holding master's or doctoral degrees	2411, however, there is no detailed information on their academic qualifications	701, of which 563 hold doctoral degrees, 111 hold master's degrees, and 26 are specialists.
Number of Students	13.292	39.410	10.579
Number of Undergraduate Programs	61 undergraduate programs, 56 of which are in-person and 5 online	117 courses, 107 of which are in-person and 10 online	45 programs, 41 of which are in-person and 4 online.
Types of Undergraduate Programs	In-person and online	In-person and online	In-person and online
Number of Undergraduate Students	11.855	32.372	9.903

Chart 3 – Block II – Characterization of RN public universities

ITEM FOR ANALYSIS	HEI A	HEI B	HEI C
Number of Graduate Programs (Stricto Sensu)	22 master's degrees and 4 doctoral degrees	133 courses: 63 academic master's degrees, 27 professional master's degrees, and 43 doctoral degrees	25: 17 master's degrees and 4 doctoral degrees
Number of Lato Sensu Graduate Courses	3 residency programs and 8 specializations	88 courses: 41 specializations, 38 medical residencies, and 9 multi-professional residencies	4 specializations
Number of Graduate Students	1.437	7.083	676
Number of Research Projects	108	2902	333
Number of Extension Projects	279 projects, with a total of 535 extension activities	12 programs, 689 projects, 461 courses, 1,037 events, 23 service provisions and 70 products	200 projects, 27 programs, 167 events, 75 courses, 8 products, 14 patents and 11 software programs
Annual Budget	301.2 million projected	1.94 billion projected	302 million
Revenue Executed	290,1 milllion	1,90 billion	299,49 million
Total Personnel, Operating, Research, and Investment Expenses	Personnel and related charges: 232.43 million; current expenses: 52.80 million; investments: 4.87 million	Personnel and related charges: 1.62 billion; current expenses: 209.11 million; investments: 16.56 million; contingency: 14 thousand	Personnel and related charges: 245.27 million; current expenses: 44.86 million; investments: 6.08 million

Source: Elaborated by authors (2024).

Thus, the first HEI to be analyzed was HEI A, which is located in the city of Mossoró, in the western region of the state of Rio Grande do Norte (RN). According to its Institutional Development Plan (IDP, 2016), it was founded in 1968 through a municipal law that merged the existing colleges in the city. The State Government transformed it into a university and state-owned institution in 1987.

According to HEI A's Management Report (2021), its teaching activities are divided into a main campus located in Mossoró, five satellite campuses distributed across several cities in the state, and another 15 in-person support centers for distance education (DE) activities. As reported in the document, the HEI has 666 administrative staff members and 787 faculty members currently in service.

Regarding the number of students, in 2021 HEI A had 13,292 duly enrolled students. Of this total, 11,855 were undergraduate students, while the remaining 1,437 were graduate students. Of the 61 undergraduate programs, 56 are offered in the in-person modality and 5 in distance education. Graduate education, in turn, comprises 41 programs, distributed between lato sensu - 3 residency programs and 8 specialization programs - and stricto sensu - 22 master's programs and 4 doctoral programs. During this period, there were 108 research projects and 279 extension projects underway; together with other activities, these totaled 535 extension actions.

HEI B, according to its IDP (2021), is a federal university founded in 1958 and located in the state capital. It is currently distributed across five campuses, one central campus located in Natal and four in the interior of the state, in addition to 16 in-person support centers. Its staff structure, according to the Management Report (2021), is composed of 2,983 administrative technicians and 2,411 faculty members.

In 2021, this university had 39,410 enrolled students, of whom 32,372 were undergraduates and 7,083 were graduate students. Its undergraduate programs comprised 117 courses, of which 107 were in-person and 10 were offered via distance education. Graduate education included 133 stricto sensu programs - 63 academic master's programs, 27 professional master's programs, and 43 doctoral programs - and 88 lato sensu programs, consisting of 41 specialization programs, 38 medical residencies, and 9 multiprofessional

residencies. During this period, there were 2,902 research projects underway. In terms of extension activities, there were 12 programs, 689 projects, 461 courses, 1,037 events, 23 service provisions, and 70 products.

Finally, HEI C, also a federal institution, according to its IDP (2021), was founded in 1967 from a municipal school of agriculture in the western region of the state. However, in 2005 it was federalized, and in 2021 its staff comprised 530 administrative technicians and 701 tenured faculty members, of whom 563 held doctoral degrees, 111 held master's degrees, and 26 were specialists.

Among its 10,579 enrolled students in 2021, 9,903 were undergraduates and 676 were graduate students. Its undergraduate programs total 45 courses, 41 offered in person and 4 via distance education. Graduate programs include 25 stricto sensu programs - 17 master's and 4 doctoral programs - and 4 lato sensu programs, all specializations. Regarding research, there were 333 research projects underway. In extension activities, there were 200 projects, 27 programs, 167 events, 75 courses, 8 products, 14 patents, and 11 software products.

It is noteworthy that HEI B is the largest and oldest university among those studied and the one that had the greatest financial resources during the analyzed period. Other relevant points regarding its institutional stability include the fact that it was the only institution that did not undergo structural changes over time, that is, it has always been a federal university headquartered in the state capital. Meanwhile, the headquarters of the other two universities are located in the same city in the western region of the state, meaning that both share the same local context.

Other points observed from these documents concern data related to research and extension activities. It is noted that, proportionally to the number of enrolled students, the number of research projects underway was higher in the federal universities - namely HEI B and HEI C - than in the state university, HEI A.

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With respect to research, it is also observed that graduate programs are more numerous at HEI B and HEI A, respectively. Regarding extension activities, since HEI B did not provide detailed information on extension actions, the only comparable data among the three universities is the number of extension projects. When considered proportionally to the number of enrolled students, the figures are quite similar, with approximately 48 students per project at HEI A and 57 students per project at HEI B.

The following section presents data related to sustainability-related characteristics inherent to these universities.

The sustainable profile of RN public universities

To understand the commitment and strategic guidelines of these universities, it is important to highlight the context presented to guide these aspects. Accordingly, it was verified how these HEIs are organized based on the sustainability tripod, that is, within the economic, social, and environmental contexts, in order to assess whether these universities are committed to and incorporate sustainability into their management. The main aspects analyzed were premises, purposes, objectives and expected results, mission, vision, and values - that is, the elements that guide the actions of these universities.

In this regard, HEI A, in section 3.1 of its IDP (2016), states that its geographical location was initially a challenge and later became a distinguishing factor for the university. Given that it is located in a region with a unique biome, the Caatinga, the local economy was previously viewed as one of scarcity. However, the region is currently recognized as a hub for irrigated fruit farming and family agriculture, in addition to standing out for its natural wealth, which includes key natural resources such as sea salt, oil, and natural gas, as well as diversified flora and fauna.

Still in section 3 of the IDP (2016), HEI A declares its concern with social impact through the education of citizen-professionals, the sensitization and engagement of the university community, and the reinforcement of the commitment that teaching, extension, and scientific initiation projects should express a relationship with local development and the economic context. Another relevant point highlighted is the university's commitment to strengthening basic education in the region, as it offers a greater number of teacher education programs (58 offerings/initial cohorts) compared to bachelor's programs (28 offerings) and 4 programs offered in both modalities. As part of its growth commitment, the university intends to: (a) expand geographically; (b) offer new academic programs; and (c) expand into new areas of knowledge.

In its Management Report (2022), HEI A focuses on presenting management data and results, without emphasizing more strategic aspects of the organization, merely mentioning them. Thus, it can be observed that aspects inherent to the three TBL dimensions are present in the contextualization of its activities, considering issues related to environmental, economic, and social dimensions within the local and regional context.

Meanwhile, HEI B highlights in its IDP (2021), in accordance with its Statute, that its activities in undergraduate and graduate education, extension, research, and innovation should prepare students for professional and civic engagement, in order to create solutions to socioeconomic problems. Furthermore, it states that its activities should promote not only economic, social, and environmental development, but also human development, through the education of more conscious citizens committed to building societies focused on equality and, above all, human rights and values.

It is also noted that the statements in HEI B's IDP (2021) contain elements that reinforce the essence of sustainable development in the activities to be carried out, as evidenced throughout the text, but especially in sections 7 -

Social Responsibility - and 12 - Local, regional, national, and international integration. In the former, the university established that its activities should ensure that the knowledge produced operates from the local to the global level and that sustainability should be an inherent and transversal factor. The latter presents and contextualizes the state-level scenario in which the university is situated and reinforces its commitment to its strategic role in developing professionals who foster local and regional development and enable national and even international integration.

Another relevant aspect identified in HEI B's activities and planning was its relationship with the external environment. In the Management Report (2021), it states that the pandemic caused disruptions and that suspended or altered actions were being resumed. It also notes that the inflationary scenario imposed greater budgetary constraints on the university and that nationwide environmental disasters reinforced the extent of changes affecting nature. Thus, the university emphasizes the need for collective efforts toward sustainable development.

In these documents from HEI B, sustainability is present through explicit statements and guiding elements for institutional activities. The main point of this analysis is the observable presence of these aspects, both in the IDP, which demonstrates a long-term strategic concern, and in the Management Report, which indicates that short-term activities also address sustainability-related issues.

Turning to HEI C, the analysis of its IDP (2021) also revealed aspects related to sustainability in both long-term and short-term planning. This is evident even in the institution's objectives, which aim to contribute to solving various local problems affecting the Brazilian semi-arid region. Its primary objective is to apply higher education in a way that promotes the political, scientific, social, environmental, and economic development of individuals and society.

Among the guidelines established in its IDP (2021), HEI C also states that: its educational activities must incorporate sustainability into their planning; its environmental sustainability will be governed by the Sustainable Logistics Management Plan (SLMP); due to its social role, it must pursue activities that respect sustainability and accessibility through diversity and inclusion; and that its economic and infrastructure axes must consider economic sustainability.

In addition to these aspects, HEI C presents its short-term strategies in its Management Report (2021) through a SWOT analysis. In this matrix, the university's sustainable development policy is identified as a strategic strength. Opportunities related to the local context are directly associated with local and regional development and sustainability-related areas. Examples of such opportunities include the projection of Rio Grande do Norte as one of Brazil's leading producers of renewable energy, the National Policy for Regional Development, and the approval of the Science, Technology, and Innovation Policy of the municipality of Mossoró. Furthermore, HEI C demonstrates clear actions and directions regarding local development and environmental sustainability, highlighting the strategic relationship between these factors as both a strength and an opportunity for stakeholders.

Thus, when analyzing the commitment of these universities through the organizational philosophy presented in their official documentation, it is observed that all of them directly or indirectly reference sustainability and its dimensions in their contexts and goals. However, only HEI B and HEI C present sustainability more clearly in their planning, and both consider these factors as commitments for their activities in both the short and long term.

In their study, Freitas et al. (2019) sought to understand the effectiveness of the missions of Federal Institutions of Higher Education (IFHEs) through their strategic elements set out in IDPs. The authors found that, in the Northeast region, the universities analyzed showed a high frequency - that is, strong

presence - of two aspects: reference to products or services and commitment to sustainable development (economic, social, and environmental). These are recurring concerns among these institutions.

In the present study, it was observed that this reality is reflected in the universities analyzed. However, as Freitas et al. (2019) point out, although there is attention to external factors such as sustainability dimensions, institutional philosophy does not fully encompass the scope of these issues. In other words, while explicit intentions are present, there is still a lack of more detailed treatment of these aspects.

Beyond organizational philosophy, formal commitment can also be analyzed through legal frameworks. In Public Administration, one of the most widely disseminated systems related to sustainability - particularly its environmental dimension - is the set of policies known as the Environmental Agenda in Public Administration (A3P), which is not mandatory, as emphasized by Vieira and Silva (2020). Accordingly, this study examined whether there was any reference to the A3P program in the documentation of the universities analyzed; however, none of them mentioned it.

The analysis also investigated references to environmental policies. Only HEI B did not explicitly mention such policies, providing merely an example indicating that inclusion and environmental awareness policies are emerging concerns within the university context. In contrast, HEI A and HEI C explicitly mention certain environmental policies. HEI A states in its IDP (2021) that it has a well-established environmental policy undergoing continuous improvement, though without further elaboration.

Meanwhile, HEI C reports that environmental sustainability is the responsibility of the Office of the Pro-Rector for Planning, which structures and implements its SLMP. In its SLMP (2021), the university provides a full reference to the environmental policies it intends to implement, based on the regulations

cited in section 3 - Reference Documents. This section includes references to legislation and normative instructions that define the following sustainability axes: SLMP, Electricity, Water, Waste, Education and Sustainability, Quality of Life in the Work Environment, and Sustainable Procurement and Contracting.

Thus, it was observed that legal sustainability policies are mentioned and more clearly detailed only by HEI C, although it does not reference the A3P. It is also noteworthy that no other legal instruments related to sustainability or education addressing these issues were cited. These findings are consistent with those of Vieira and Silva (2020), who emphasize that Public Authorities directly influence and impact society; therefore, the implementation of Social Responsibility elements is fundamental, as they stimulate the legitimization of public activities. In the context analyzed here, the A3P and its environmental policies could foster the integration of social responsibility with sustainability, thereby increasing the legitimacy of these factors.

Finally, in the search for elements that demonstrate the presence of sustainability in the strategic orientation of the universities studied, the following section analyzes data related to strategic elements and their relationship with this theme.

The presence of sustainability in the strategic elements of RN public universities

Complementing the organizational philosophy, the mission, vision, and values of organizations guide the objectives and actions of universities. Therefore, to identify the elements that compose them and guide management practices associated with socio-environmental themes, a checklist was adopted. Thus, to begin the analysis, the missions and values collected from the documents are fully presented in Chart 4.

Chart 4 – Strategic elements of RN public universities

HEI	Insitutional Mission	Institutional Vision
HEI A	"to promote the education of competent, critical, and creative professionals for the exercise of citizenship, in addition to producing and disseminating scientific, technical, and cultural knowledge that contributes to the sustainable development of the region and the country" (HEI A IDP, 2021, p. 13).	"to be recognized as an autonomous university, both politically and financially, capable of planning and continuously self-assessing, with a view to carrying out teaching, research, and extension activities, aiming at excellence in the education of individuals and seeking the sustainable development of society" (HEI A IDP, 2021, p. 14).
HEI B	"to educate, produce, and disseminate universal knowledge, preserve and disseminate the arts and culture, and contribute to human development, committing to social justice, socio-environmental sustainability, democracy, and citizenship" (HEI B IDP, 2021, p. 19).	"to consolidate itself as an innovative and inclusive university, socially referenced, and nationally and internationally recognized for its academic and management excellence" (HEI B IDP, 2021, p. 21).
HEI C	"to produce and disseminate knowledge in the field of higher education, with an emphasis on the Brazilian semi-arid region, contributing to sustainable development and the full exercise of citizenship, through humanistic, critical, and reflective education, preparing professionals capable of meeting societal demands" (HEI C IDP, 2021, p. 13).	"to become a national and international reference as an ecologically responsible university, integrated with society, as a center of excellence in academic, scientific, technological, and cultural production, with an emphasis on the development of the Brazilian semi-arid region" (HEI C IDP, 2021, p. 13).

Source: Elaborated by authors (2024).

When seeking to identify sustainability through its dimensions in the missions of these universities, it was observed that sustainability is explicitly mentioned only in the mission of HEI B. In this case, there is a commitment to socio-environmental sustainability, as well as to democracy, social justice, and citizenship, according to its IDP (2021). However, it was also observed that all universities include statements linked to the social dimension in their missions and visions. Thus, only the social dimension is present in these strategic elements.

Accordingly, it can be noted that the universities analyzed demonstrate, in the official declaration of their institutional profile through their missions, a

responsibility toward sustainable development and/or related themes. However, the term "sustainability" itself is not explicitly mentioned.

With regard to the dimensions, each was analyzed separately. There is no mention of the environmental dimension in the missions, except for the reference to "socio-environmental sustainability" in HEI B. As for the economic dimension, there is no mention at all. In addition to the case already highlighted for HEI B, the social dimension in HEI C's mission can also be perceived through the excerpt in its IDP (2021), which states that professionals should be capable of meeting societal demands.

Regarding the visions of these institutions, it is noted that neither HEI A nor HEI B declares sustainability as a future objective to be achieved. Meanwhile, HEI C states its intention to be recognized as a reference in local and regional development, given that it is located in the Brazilian semi-arid region.

When analyzing the visions through the lens of sustainability dimensions, HEI C is the only institution that declares plans to implement environmental dimension issues, expressed in its desire to become an ecologically responsible university integrated with society. The only institution that mentions aspects of the economic dimension is HEI A, which expresses the desire to be recognized as a financially autonomous university. Meanwhile, aspects related to social issues are not explicitly stated in the visions.

This result is noteworthy because it contrasts with the findings of Ávila, Madruga, and Beuron (2016), who found in their research that, in the universities they studied, the actions most prevalent in strategic elements were related to the social dimension. These authors argue that, because it involves human capital, this dimension aligns closely with universities, as they exist to meet societal demands and are reflected in values. Similarly, Castro et al. (2020) also found the same result in their research, namely the prevalence of the social dimension in the missions and visions of federal universities in Brazil's Northeast region.

Other elements that guide the strategies and activities of a university are values, which reflect the characteristics and essence desired in the institution's members. In addition to values, there are also principles that are intrinsic to the institution's nature and constitute another type of strategic element.

When assessing the mention of sustainability within these values, it was observed that only HEI C presents sustainability as one of its guiding principles. When these points were analyzed according to sustainability dimensions, the following was observed: environmental dimension - addressed by none of the universities; economic and social dimensions - mentioned only by HEI B, which includes social democracy, economic democracy, and social justice as part of its principles.

In other words, the principles and values of these universities may reference certain aspects of sustainability, but they do not clearly articulate a proposition of the university having sustainability as an explicit element of its institutional profile.

These results stand out because Freitas et al. (2019), when examining the strategic elements of Federal Institutions of Higher Education (IFHEs), found that the most common factors were "Reference to products and services" and "Commitment to sustainable development (economic, social, and environmental)." That is, while most organizations demonstrate a strong commitment to sustainability, the universities analyzed in this study present only limited elements related to these objectives and do not exhibit a profile strongly aligned with them.

Commitment to the 2030 Agenda

When searching the official documents of these universities for the existence of a strategic plan for the implementation of sustainability, only the federal universities (HEI B and HEI C) indicate such a plan; however, they merely

state that it will fall under the responsibility of the PLS, without providing detailed explanations. As for the state university, HEI A, no such mention is made, since it is not even required to have this type of documentation.

In this context, one of the main references for countries and organizations is the 2030 Agenda and its 17 Sustainable Development Goals (SDGs). Therefore, an attempt was made to identify whether the universities studied present the Agenda as a reference for their activities.

HEI C was the only institution that did not explicitly mention the 2030 Agenda in any of the texts analyzed. Meanwhile, HEI A emphasizes that its Organizational Development Office (DDO) aligns its actions with the Institutional Development Plan (IDP), the current Action Plan, and the 2030 Agenda. HEI B, in turn, cites the 2030 Agenda as a reference for its Social Responsibility actions.

With regard to the SDGs, HEI A, according to its Management Report (2022), presents itself as a signatory to the Agenda and reports that it has begun mapping the integration of its administrative routines with the SDGs, including incorporating them into its calls for proposals and selection processes. In addition, the university discussed the SDGs during its Environment Week, involving all administrative units and their respective management teams. The university does not specify which SDGs were addressed, but based on the statements made, it is assumed that all of them were considered.

In its IDP (2021), HEI C states that the SDGs serve as a reference for its planning and activities and even identifies three of them as the most relevant to its Social Responsibility. These are, respectively: SDG 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; SDG 8 - Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all; and SDG 10 - Reduce inequality within and among countries.

When examining whether the SDGs are used as references for the evaluation of current or future actions, none of the universities establish this type of correlation. However, HEI B uses the SDGs as a reference and justification for planning its PLS; for each action plan and its respective objective, the corresponding SDGs related to the theme addressed are listed.

In order to meet demands related to the SDGs, HEI A entered into two partnerships that were not detailed in its Management Report (2022). In summary, the university joined the SDG Network 2030 Agenda and obtained the SDG 2030 Agenda Seal. The other two universities did not report having this type of partnership.

HEI C established a partnership aimed at addressing socio-environmental issues related to waste disposal through a cooperation agreement with the Associations of Recyclable Materials Collectors (ASCAMAREM and ACREVI), as documented in both its PLS (2021) and its Management Report (2022). The other two universities did not report having similar partnerships.

Given that only HEI A has an explicit commitment to the 2030 Agenda and its SDGs, this is perceived as an area for improvement for the other universities. Fioreze (2022) emphasizes that universities with strong ties to society and that offer courses and services to the community and government are more likely to develop these tools and become universities oriented toward development.

As a way to represent and facilitate the visualization of the relationship between the practices identified in the official documents of these three public universities in the state of Rio Grande do Norte and their respective SDGs, Charte 5 was developed. It should be noted from the outset that for each sustainability management practice identified, it was possible to establish a link with at least one or more SDGs.

Chart 5 – The relationship between the reported practices and the SDGs by university

SDG	ENVIRONMENTAL DIMENSION		
	HEI A	HEI B	HEI C
	Practices	Practices	Practices
SDG 9 - Industry, Innovation and Infrastructure	Renovation and recovery of the outpatient clinics of the Faculty of Health Sciences	Approval and dissemination of the Asset Management Manual	Composting plant
	Recovery, revitalization and expansion of physical structures of classroom blocks in some buildings	Implementation of fiber optic and metallic cabling infrastructure services	Selective waste collection
	Construction of the postgraduate building of the Faculty of Exact and Natural Sciences	Improvements in IT governance	
SDG 7 - Affordable and Clean Energy SDG 12 - Responsible Consumption and Production	Not applicable	Not applicable	Display of electricity consumption information
SDG 6 - Clean Water and Sanitation	Not applicable	Not applicable	Replacement of hydraulic devices
SDG 6 - Clean Water and Sanitation SDG 9 - Industry, Innovation and Infrastructure	Construction of septic tanks and soakaways on the Central Campus	Not applicable	Not applicable
SDG 7 - Affordable and Clean Energy SDG 12 - Responsible Consumption and Production	Not applicable	Creation of a tool that monitors the energy profile of consumer units	Not applicable
SDG 9 - Industry, Innovation and Infrastructure SDG 11 - Sustainable Cities and Communities	Expansion of the medium-voltage electrical and fiber optic network at the Central Campus	Not applicable	Not applicable
SDG 15 - Life on Land	Not applicable	Not applicable	Tree planting and maintenance of these areas

RELISE

ECONOMIC DIMENSION			
SDG	**HEI A**	**HEI B**	**HEI C**
SDG 9 - Industry, Innovation and Infrastructure SDG 11 - Sustainable Cities and Communities	Giga Network Deployment Integrated System Deployment	Not applicable	Not applicable
SDG 11 - Sustainable Cities and Communities	Not applicable	Expansion of VPN use	Not applicable
SDG 8 - Decent Work and Economic Growth	Use of outsourced labor	Not applicable	Use of outsourced labor Internship opportunities
SDG 12 - Responsible Consumption and Production	Replacement of computerized machines	Firewall cabling	Not applicable
SDG 16 - Peace, Justice and Effective Universities	Transparency through the Participatory Budget Committee Internal Audit	Internal Audit	Application of the Integrity Plan Preparation and presentation of an Open Letter of Services Internal Audit
SOCIAL DIMENSION			
SDG	**HEI A**	**HEI B**	**HEI C**
SDG 8 - Decent Work and Economic Growth	UNI Cultural Employee Career and Salary Plan 70 training activities Regulation of volunteer work	Professions Showcase Employee Career and Salary Plan	Junior Enterprises Mossoró Agribusiness Technological Incubator – IAGRAM People Development Plan (PDP)
SDG 5 - Gender Equality	Extension of paternity leave	Not applicable	Not applicable
SDG 4 - Quality Education	Implementation of the Campaign against Moral and Sexual Harassment	Not applicable	Not applicable

RELISE

SOCIAL DIMENSION			
SDG	HEI A	HEI B	HEI C
SDG 16 – Peace, Justice and Effective Universities	"UNI A" Action	Education, Inclusion, Accessibility and Specific Needs	Center for Arts and Culture (CAC)
		Enhancement of the Museum Câmara Cascudo Collection	
	Black Awareness Week	Implementation of Heteroidentification Committees in Selection Processes	
		Reservation of places for persons with disabilities within the general admission system	
	Inclusion and Diversity Program	Admission through SiSU to the Medicine program – Natal	
		Implementation of six (6) new Permanent Inclusion and Accessibility Committees (CPIAs)	
	Institutional Evaluation	Inclusive Tutoring Program (PTI)	
		Development of products and the Accessibility Laboratory (AL)	
SDG 3 – Good Health and Well-being SDG 16 – Peace, Justice and Effective Universities	Univer(C)Idades	Not applicable	Univer(C)Idades
SDG 4 – Quality Education SDG 8 – Decent Work and Economic Growth SDG 3 – Good Health and Well-being	Not applicable	Not applicable	Reservation of places for staff members in graduate programs

RELISE

SOCIAL DIMENSION			
SDG	**HEI A**	**HEI B**	**HEI C**
SDG 3 - Good Health and Well-being SDG 8 - Decent Work and Economic Growth	Health Assistance	Employee Health Care	Diagnosis on Remote Work and Quality of Life at Work
	Employee Assistance Program	Psychosocial Care for Employees	Offering Massage Therapy and Auriculotherapy
	Cycles Program	Occupational Health and Safety Surveillance	Various Lectures and Time Management Workshop
	Observ (Employee Health Observatory)		Occupational Safety Practices
SDG 3 - Good Health and Well-being	Uni A Healthy Living	Not applicable	Gym reopening
	Nupics (Center for Integrative and Complementary Health Practices)		
	Green April and Yellow May awareness campaign		
	Long Live UNI A - Rio Branco		
	Christmas Caravan		
	EdUCA artistic groups		
	Theater festival		
SDG 16 - Peace, Justice and Effective Universities SDG 17 - Partnerships for the Goals	Not applicable	Procurement and Contracting Management and Prioritization Committee	Not applicable

Source: Elaborated by authors (2024).

Based on chart 5, it was observed that HEI A stood out in the number of declared actions that could be associated with sustainable dimensions and, consequently, with the SDGs, when compared to the federal units. Therefore, HEI A had a total of 37 identified practices, while HEI C and HEI B had 22 and 21, respectively.

FINAL CONSIDERATIONS

This study aimed to understand how the Sustainable Development Goals (SDGs) have been developed in the practical context of public universities in the state of Rio Grande do Norte (RN), Brazil, through an analysis of sustainability management practices identified in the managerial documentation of these universities.

Thus, when analyzing the commitment of university management to sustainability, it was observed that the universities studied demonstrate elements inherent to sustainability; however, no explicit socio-environmental policies were identified. It was also noted that, even though the federal universities address elements of sustainability or position themselves as development agents, the universities analyzed do not have formalized commitments to one of the main references in this field, namely the 2030 Agenda and its 17 SDGs. In fact, in the federal universities, sustainability management is perceived only through the Sustainable Logistics Plan (PLS), which is mandatory.

Regarding the strategic elements that guide management practices associated with socio-environmental themes, the missions, visions, values, and institutional principles presented in the universities' documents were analyzed. It was thus possible to verify that only certain aspects of sustainability are present in these elements, but the term itself is not explicitly stated. Given this context, few activities could be associated with any of the dimensions of sustainability.

Based on this association, it was possible to verify that the university with the greatest resources was the one that presented the fewest actions that could be linked to sustainability dimensions. It was also found that, in the universities studied, the SDGs and their themes most closely related to sustainability management practices were SDG 8 (Decent Work and Economic Growth), SDG 3 (Good Health and Well-Being), and SDG 16 (Peace, Justice, and Strong Institutions). A lack of alignment with certain SDGs was also observed, such as

SDG 1 and SDG 10, which address poverty eradication and the reduction of inequalities, respectively.

Therefore, this study verified that some management practices aligned with one or more dimensions of sustainability are directly related to the SDGs. That is, when such practices are properly oriented, it becomes possible to achieve Sustainable Development. If this alignment occurs at the planning stage, implementation tends to be more effective and, moreover, more responsive to society.

Among the main theoretical contributions of this research is the expansion of discussions on the implementation of sustainability in universities, as well as the application of the SDGs at different organizational levels within Public Administration institutions.

In terms of practical applications, this study promotes discussions on sustainability models - or even the absence thereof - in public universities. Another practical contribution is the presentation of the direct relationship between the SDGs and existing practices, which implies analyzing sustainability within organizations. These findings may serve as a reference as a practical model or as a basis for discussing what is currently being implemented in universities, functioning as a form of oversight or evaluation.

Regarding research limitations, it was noted that the documents analyzed often present summarized information, which makes it difficult to draw precise inferences about certain practices. Another limitation is that this study did not allow for the analysis of subjectivity in some of the aspects investigated; that is, it did not permit a more in-depth exploration of variables.

As the theme of this study addresses the future and more appropriate forms of development to improve it, although the actions of these universities were compiled, some points were identified as opportunities for improvement in future research. It is therefore suggested that this topic be addressed in studies

that allow for temporal and organizational comparisons, enabling the evaluation of prevailing sustainability models.

Another suggestion is to employ different data collection methods using primary data, making it possible to carry out data triangulation. As a practical suggestion, for example, interviews could be conducted with managers, faculty members, and/or students.

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