SUSTENABLE MANAGEMENT OF THE DINOSAUR VALLEY PARK:
PROPOSAL FOR A PLAN ALIGNED WITH THE SUSTAINABLE DEVELOPMENT GOALS (ODS)

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ABSTRACT

Objective: The aim of the research is to propose a Sustainable Management Plan for Vale dos Dinosaurs Park aligned with the Sustainable Development Goals (SDGs).

Theoretical Framework: The theoretical findings regarding Sustainability and Sustainable Development Goals (SDGs) are described by (SILVA; LIMA, 2020), (Costa, 2023), and (CESAR et al., 2018), focusing on the approach to the definition and characterization of SWOT Analysis by Ulrich (2002) and Sapiro (2003), underpinning the investigative phenomenon. Manager (2009) bolstered the theme of sustainable development through SWOT analysis.

Method: The adopted methodology included the analysis of previous studies by Costa and Martins (2023) on the SWOT tool and Sustainability Indicators in the Dinosaurs Park in Sousa, Paraíba. Based on these sources, a strategic plan aligned with the UN Sustainable Development Goals, focused on environmental conservation, regional socio-economic development, and paleontological preservation of the Dinosaurs Park, was developed.

Results and Conclusion: The study emphasizes the relevance of SWOT analysis in sustainable management, identifying key points to boost competitiveness and profitability consciously. It integrates SWOT principles with sustainability indicators, aiming at environmental conservation and socio-economic development.

Research Implications: The research identifies opportunities for sustainable management of Vale dos Dinosaurs Park, such as recycling programs, energy conservation, and collaborations with community organizations. It proposes the development of a Sustainable Management Plan aligned with the Sustainable Development Goals, emphasizing effective strategies, adoption of new technologies, and partnerships with other parks to promote sustainability.

Originality/Value: The integrated and proactive approach to sustainable management of Vale dos Dinosaurs Park, proposing a Sustainable Management Plan aligned with the Sustainable Development Goals (SDGs), demonstrates a holistic and updated vision regarding the environmental and sustainability challenges faced by park management.

Keywords: SWOT Analysis, Indicators, Sustainability, SDGs.

GESTÃO SUSTENTÁVEL DO PARQUE VALE DOS DINOSSAUROS: PROPOSIÇÃO DE UM PLANO ALINHADO AOS OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL (ODS)

RESUMO

Objetivo: O objetivo da pesquisa consiste em propor um Plano de Gestão Sustentável do Parque Vale dos Dinossauros alinhado aos Objetivos de Desenvolvimento Sustentável (ODS).

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Referencial Teórico: Os achados teóricos referentes a Sustentabilidade e objetivos de desenvolvimento sustentável (ODS) são descritos por (SILVA; LIMA, 2020), (Costa, 2023) e (CESAR et al., 2018), tratando-se da abordagem da definição e caracterização da ANÁLISE SWOT Ulrich (2002), Sapiro (2003), fundamentaram o fenômeno investigativo. Manager (2009), alicerçaram a temática do desenvolvimento sustentável e através da análise Swot.


Resultados e conclusão: O estudo enfatiza a relevância da análise SWOT na gestão sustentável, identificando ponto-chaves para impulsionar competitividade e lucratividade de forma consciente, unem princípios da análise SWOT com indicadores de sustentabilidade, visando à conservação ambiental e ao desenvolvimento socioeconômico.

Implicações da pesquisa: A pesquisa identifica oportunidades para a gestão sustentável do Parque Vale dos Dinossauros, como programas de reciclagem, conservação de energia e colaborações com organizações comunitárias. Propõe o desenvolvimento de um Plano de Gestão Sustentável alinhado aos Objetivos de Desenvolvimento Sustentável, enfatizando estratégias eficazes, adoção de novas tecnologias e parcerias com outros parques para promover a sustentabilidade.

Originalidade/valor: A abordagem integrada e proativa para a gestão sustentável do Parque Vale dos Dinossauros, trazendo uma proposta para desenvolver um Plano de Gestão Sustentável alinhado aos Objetivos de Desenvolvimento Sustentável (ODS) demonstra uma visão holística e atualizada em relação aos desafios ambientais e de sustentabilidade enfrentados pela gestão de parques.

Palavras-chave: Análise SWOT, Indicadores, Sustentabilidade, ODS.

1 INTRODUCTION

Environmental preservation is a crucial mission, the actions of impacts caused by man on natural systems, reflecting the interconnection between nature and human activities, with growing awareness about the impacts of economic, social and political practices on the environment, emerges the pressing need to promote sustainability in all spheres of society (Leff, 2001). Faced with the threats of climate change, loss of biodiversity and degradation of ecosystems, the urgency of adopting strategies that guarantee the preservation of natural resources for present and future generations becomes increasingly evident (Sachs, 2004).

Thus, the conventional development paradigm, focused exclusively on economic growth and stimulated by consumerism, appears to be unsustainable in the face of the growing scarcity of natural resources and growing socioeconomic disparity. Environmental preservation, recognized at the Stockholm Conference in 1972, emerges as an imperative for global well-being. In the Brazilian context, despite the efforts of government authorities, many locations face gaps in the administration and delivery of basic services, which reflects the absence of planned strategies and consideration for sustainability. The Sustainable Development Goals (SDGs) offer a framework for achieving harmony between the economy, society and ecosystem, while indicators play a leading role in assessing progress and holding the parties involved accountable. However, the lack of effective strategic planning in many municipalities is notable, neglecting the protection of natural resources and raising community
awareness about their relevance, with only a minority adopting recommended practices, such as SWOT analysis.

For Ferreira de Macêdo et al. (2021), it is crucial that both parties recognize their role in preserving the environment. In this sense, environmental preservation can be defined as an essential element for the sustainability and balance of the ecosystem (reference). Furthermore, as highlighted by Severo et al. (2019), the development of environmental awareness in the members of a society can be a vector of transformation in the relationship between the population and the environment. It is important to emphasize that the need to develop environmental awareness should not be restricted to the population, but also to municipal governments. Despite legislation that requires the implementation of various environmental policies, there are still signs of a lack of real awareness about the importance of preserving the environment.

SWOT analysis helps organizations identify their strengths. Identifying strengths can help companies leverage them to grow and differentiate themselves from competitors. By identifying strengths, companies can allocate resources, focus on improving their strengths, and establish a competitive advantage. For example, an organization with a strong research and development team can leverage it to bring innovative products to the market. Additionally, by identifying strengths, companies can leverage them to create a foundation for future success.

Therefore, managers needed to know and understand the importance of exploring the company's internal and external environment, studying and understanding the organization's strengths, opportunities, weaknesses and threats. This way, it would become simpler to distinguish which business strategies would be used to prepare good strategic planning. Soon, organizations began to operate with analysis tools, so that they could make strategic business decisions, taking advantage of opportunities and improving the organization's performance. Among the tools used, the SWOT Analysis stands out, which works by analyzing scenarios, whether in the internal or external environment, thus providing a business diagnosis that collaborates with decision-making for the company's evolution.

Effective sustainability management in parks and protected areas is fundamental to the preservation and protection of natural resources and ecosystems. While a SWOT analysis can provide valuable insights into sustainability efforts, it may not consider all of the challenges and opportunities facing sustainable park management.

By examining the strengths, weaknesses, opportunities and threats of sustainable park management, it is possible to deepen the understanding of effective sustainability strategies and develop more comprehensive approaches to managing this area. By collaborating with stakeholders inside and outside the park, through the implementation of new technologies and practices, as well as establishing partnerships with other parks and protected areas, we can contribute to a more sustainable future for parks and the environment.

Inserted in this context is the Vale dos Dinossauros Natural Monument, located in the municipality of Sousa, Paraíba. In addition to boosting the local economic sector, Dinosaur Valley also influences several cultural aspects of the city. From this perspective, tourism must be approached not only as a catalyst for local income, but recognizing its relevance in preserving the culture and social cohesion of the community. Therefore, effective strategic planning is crucial for managing this tangible heritage. It is understood that formulating a strategy requires understanding the business and the internal and external context of the organization, and the SWOT matrix can be used as a tool (FERNANDES, 2021). This management model is widely used in the analysis of internal (strengths and weaknesses) and external (opportunities and threats) aspects (MENDES et al., 2022).

Considering the importance of sustainable management of historic parks and preserved areas, we sought to answer the following question: how to develop a sustainable management plan for Parque Vale dos Dinossauros, based on the Sustainable Development Objectives?
Therefore, the research aims to propose a Sustainable Management Plan for Parque Vale dos Dinossauros aligned with the Sustainable Development Goals (SDGs).

1.1 Sustainability and sustainable development goals (SDGs)

Sustainability has become a pressing issue in today’s world, with growing concerns about the impact of human activities on the environment and society. Governments, organizations and individuals are taking steps to promote sustainability, but measuring progress towards sustainability goals can be challenging (Silva; Lima, 2020).

According to Dos Santos Castro and Machado Soares (2024), sustainability can be defined as the principle that guides development that seeks not only its economic strength, but also respect for the environment and human dignity (Atilgan; Kanat, 2017; Garcia, 2020; Selvanathan, 2013). Thus, it is possible to facilitate a development that has strength as its characteristics, but without forgetting to pay attention to other equally relevant elements, namely respect for the environment and human dignity, where the term sustainability, used in the study, emphasizes the synergy of the three elements and not just the economic dimension.

The Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015 to address global social, economic and environmental challenges. These goals provide a framework for sustainable development and aim to eradicate poverty, reduce inequality and protect the planet.

![Figure 1- Sustainable development objectives of the 2030 Agenda](Source: UN, 2015)

According to Costa (2023), although sustainable management practices have numerous benefits, they may not be viable for all parks. Some parks may not have the necessary resources or support which can make it difficult to implement sustainable practices. Additionally, some parks may have conflicting priorities, such as preservation over sustainability, which can make it difficult to balance the two. Furthermore, some parks may not have the infrastructure to support sustainable practices, which can make it difficult to effectively implement sustainable practices.

Sustainability indices are crucial for measuring progress towards sustainability goals. A significant advantage of sustainability indicators is that they provide a way to track changes and evaluate the effectiveness of policies and initiatives. By measuring the impact of sustainability initiatives, policymakers can adjust their strategies and ensure their efforts are making a positive difference.

Furthermore, according to Silva (2020), indicators can help identify areas where improvements are needed, allowing political decisions to focus on specific issues that require
attention. Indicators can help communicate progress to stakeholders, providing transparency and accountability.

On the other hand, sustainability indicators are limited in scope and may not capture the full picture of sustainability. For example, some sustainability issues are difficult to measure with indicators, such as cultural or social aspects of sustainability. Furthermore, indicators may not capture the full impact of sustainability initiatives, including unintended consequences. Finally, indicators may not take into account the compromises that must be made between different sustainability objectives, such as economic development and environmental protection (CESAR et al., 2018).

Sustainability and its characteristics can promote accountability and transparency. A significant advantage of indicators is that they can help hold governments and organizations accountable to their sustainability commitments. By providing a way to track progress, indicators can ensure that policymakers are meeting their sustainability goals. Additionally, indicators can help ensure that sustainability efforts are transparent and open to scrutiny, building trust and credibility among stakeholders.

However, developing and implementing sustainability indicators can be costly and time-consuming. Developing and implementing indicators can require significant resources and expertise, diverting resources from other sustainability efforts. Furthermore, the costs of developing and implementing indicators may outweigh the benefits in some cases, raising questions about the feasibility of using indicators as a tool to promote sustainability.

In conclusion, sustainability indicators have advantages and disadvantages that must be considered when evaluating their use and value. While indicators provide a way to track progress, promote accountability and transparency, and prioritize sustainability efforts, they can also be limited in scope, subject to manipulation or misinterpretation, and expensive and time-consuming to develop and implement. Policymakers should carefully consider these factors when deciding whether to use sustainability indicators as a tool to promote sustainability.

In this sense, sustainability indicators can be used in SWOT analysis to assess sustainability in specific contexts. It is in this context that this work makes its contributions and for this, it is important to know the SWOT tool.

1.2 SWOT Analysis Concepts

SWOT Matrix is a term in English, also known as SWOT Matrix (Portuguese), which refers to a set of four words: “Strengths”, “Weaknesses”, “Opportunities” and “Threats.”

According to Daychouw (2017), SWOT analysis is one of the tools used to study market scenarios, being the guide for preparing a company's strategic and management plan. In other words, it is an administrative tool that aims to evaluate the internal and external environments, so that business strategies can be formulated, according to the company's needs.

For Ulrich (2002), SWOT analysis is one of the most used techniques in social research, whether in developing diagnoses, organizational analysis or drawing up plans. Its function, according to Chiavenato and Sapiro (2003), is to cross-reference opportunities and threats external to the organization with its strengths and weaknesses. In other words, the SWOT analysis allows the administrator to make a strategic business diagnosis by analyzing the variables of the internal environment, which are summarized in strengths and weaknesses (strengths and weaknesses), and the external environment, which is characterized by opportunities and threats.

In the internal environment, the strengths and weaknesses are observed, that is, the strengths and weaknesses are identified, highlighting the company's advantages and disadvantages. According to Martins (2017), strengths are the positive characteristics acquired by the organization in relation to the recognition of its products and provision of services, image
and organizational culture, factors that can be controlled by the company and strengthen its strategic plan.

For Martins (2017), weaknesses are the most negative aspects of the company in relation to its product, service or business unit. In this case, you can learn about the organizational culture, what the employees’ deficits are, what the production capacity is, whether there is a lack of machinery and have a general overview. In the external environment, it is possible to identify external factors that influence the company, such as opportunities and threats. According to Martins (2007), opportunities are the positive characteristics of the market, which can generate advantages for the company in terms of services and products provided. That is why it is so important to know the customer's needs and take advantage of favorable conditions, whether offered by suppliers or as a result of the economy. Also, according to Martins (2007), threats from an external environment are the negative characteristics of the market, which can generate strategic disadvantages for the company in terms of the scope of services and products provided.

Luecke (2009, p. 23) reinforces that “considering external and internal factors is essential because they clarify the world in which the company or unit operates, allowing better planning of the desired future”. According to Oliveira (1991), the purpose of internal analysis is to highlight the deficiencies and qualities of the company being analyzed. It can be said that the internal environment is controllable, therefore, the company can control the capabilities and resources, as its analysis provides knowledge of the organization's skills and competencies, in addition to identifying the business's weaknesses and enhancing its strengths.

For Bethlem (2009), the external environment has a lot of influence on the company's performance. Therefore, the external environment has no control, therefore, the manager must always be analyzing the environment so that he can minimize its impact. According to Manager (2009), avoiding external threats is not always possible, however, contingency planning can be carried out to face them, reducing their effects.

Therefore, this tool brings several benefits to organizations, for example, it provides a clear view of their strengths and weaknesses, giving the manager the opportunity to change certain situations. The most important thing is that this tool not only provides a broad view of the organization, but of the entire context in which it operates. This makes it possible to eliminate possible threats, adopting new policies and developing strategies aimed at the organization's growth. For Torres (2014), the primary function of SWOT is to enable the choice of an appropriate strategy – to achieve certain objectives – based on a critical assessment of internal and external environments. It is understood as a strategy, plan or methods used to achieve certain objectives.

In view of the above, we seek to use the SWOT tool, associating it with sustainability indicators to assess sustainability, using the Parque Vale dos Dinossauros de Souza-PB as the study environment.

2 METHODOLOGY

This section describes the methodology adopted to develop a sustainable management plan for the Dinosaur Park, located in the municipality of Sousa, Paraíba, Brazil. This plan is an extension of previous studies conducted and published in two articles, aiming to promote the conservation of natural resources, regional socioeconomic development and the preservation of paleontological heritage, aligned with the principles of sustainable tourism and the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (UN).

To better understand the method, the description of the methodological procedures adopted follows. Initially, the research carried out by Costa and Martins (2023) was based on the use of the Swot tool in the management of the Dinosaur Park in the Municipality of Sousa,
PB. The study found the absence of comprehensive strategic planning for the Vale dos Dinossauros Park, while other Brazilian parks have already adopted methodologies such as the SWOT matrix for this purpose. However, it becomes clear that there is a pressing need to improve strategic analysis, especially in the sustainable context, aiming to ensure more efficient and sustainable management of the park, considering the Sustainable Development Goals (SDGs).

Next, we sought a study on the “Application of the Swot tool in the sustainable management of paleontological parks: Study in Vale dos Dinossauros, Sousa -PB”, also carried out by Costa and Martins (2023). This research used SWOT analysis combined with sustainability indicators and the Sustainable Development Goals (SDGs) to identify the current positioning of Parque Vale dos Dinossauros, in the municipality of Sousa-PB, in relation to sustainable management. In this way, it explored the strengths and weaknesses, threats and opportunities of the investigated context, being a fundamental basis for the sustainable management plan proposal presented in the present study.

The use of Sustainability Indicators was fundamental to identify and analyze aspects relevant to the management of paleontological parks, covering environmental, social, economic and cultural issues. This analysis made it possible to evaluate the feasibility of implementing such indicators in the specific context of Dinosaur Park.

Based on these data, on-site observation and analysis of documents and publications on the object of study, a strategic plan was developed for the sustainable management of the Dinosaur Park, taking into account the results of the SWOT analysis and sustainability indicators. This plan aims to establish clear and measurable objectives aimed at the conservation of natural resources, the socioeconomic development of the region and the preservation of paleontological heritage.

3 RESULTS AND DISCUSSIONS

The municipality of Sousa, located approximately 430 kilometers from João Pessoa, stands out as an economic and cultural hub in the Sertão of Paraíba, home to around 70 thousand inhabitants, according to estimates by the Brazilian Institute of Geography and Statistics (IBGE) in 2021. One of the main characteristics that attracts visitors and tourists to the region is its paleontological richness, evidenced by the Vale dos Dinossauros Park, located in Sousa, Paraíba. Internationally recognized for its collection of dinosaur footprints, the park not only preserves important paleontological remains, but also plays a key role in promoting historical and scientific tourism in the region.

Its history is deeply rooted in significant historical events, including its role during the 1930 Brazilian Revolution, which shaped local identity and culture. Furthermore, the city has a rich cultural heritage, represented by its historic buildings and monuments, which are witnesses of its past and contribute to the understanding of its present identity.

With the increase in tourism in Parque Vale dos Dinossauros, the responsibility of ensuring its sustainability and environmental awareness arises. Implementing sustainable management practices in the park can significantly contribute to preserving the environment, improving the visitor experience and boosting the local economy. However, it is crucial to recognize the challenges and opportunities associated with this process.

It is important to note that sustainable management practices are not always effective. The effectiveness of sustainable practices may vary depending on the specific park and its context. For example, some parks may face unique environmental challenges, such as extreme weather conditions, that can make it difficult to effectively implement sustainable practices. Additionally, sustainable practices can have unintended consequences or tradeoffs. For example, renewable energy sources can have a high initial cost and require significant
investment in infrastructure, which can have an impact on the park’s budget. Finally, sustainable practices may not address all environmental or social issues. For example, sustainable practices may not address issues related to social justice or animal welfare, which are also important considerations for parks.

The use of sustainability indicators, combined with SWOT analysis, offers a comprehensive approach to identify areas for improvement and enhance the strengths of Parque Vale dos Dinossauros. Sustainability indicators provide clear metrics to assess the environmental and social impact of park operations, while SWOT analysis identifies opportunities for sustainable development and threats that must be mitigated.

The following table was developed based on the analysis carried out by Costa and Martins (2023) on the sustainability aspects of Parque dos Dinossauros. It presents a compilation of the strengths, weaknesses, opportunities and threats identified, as well as the sustainability indicators associated with each Sustainable Development Goal (SDG). This framework provides a comprehensive view of the challenges and opportunities to promote sustainability and balanced development of the park.

### Table 1: Sustainable development objectives and indicators Parque Vale dos Dinossauros

<table>
<thead>
<tr>
<th>SDG (Sustainable Development Goal)</th>
<th>Strong points</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDG 4 - Quality Education - Educational potential of the Park to raise awareness about paleontology and conservation of natural resources</td>
<td>Sustainability Indicators</td>
<td>- Lack of clear and implemented educational strategies</td>
<td>- Opportunity to increase the number of visitors participating in educational activities</td>
<td>- Competition with other similar education and awareness sites</td>
</tr>
<tr>
<td>SDG 6 - Clean water and sanitation - Conservation of water resources and sustainable water management</td>
<td>Sustainability Indicators</td>
<td>- Need to improve water use efficiency</td>
<td>- Implementation of water reuse practices</td>
<td>- Water scarcity and competition for water resources</td>
</tr>
<tr>
<td>SDG 7 - Affordable and clean energy - Use of clean and renewable energy</td>
<td>Sustainability Indicators</td>
<td>- Dependence on non-renewable energy sources</td>
<td>- Investment in renewable energy and energy efficiency</td>
<td>- Fluctuations in energy prices and resource availability</td>
</tr>
<tr>
<td>SDG 8 - Decent Work and Economic Growth - Contribution to regional economic growth through the generation of direct and indirect jobs</td>
<td>Sustainability Indicators</td>
<td>- Lack of qualified jobs and job instability</td>
<td>- Potential to increase the number of direct and indirect jobs</td>
<td>- Competition with other sources of employment in the region</td>
</tr>
<tr>
<td>SDG 11 - Sustainable Cities and Communities - Contribution to improvements in local infrastructure</td>
<td>Sustainability Indicators</td>
<td>- Inadequate infrastructure to receive tourists</td>
<td>- Possibility of public investment in infrastructure improvements</td>
<td>- Risk of not obtaining the necessary resources for improvements</td>
</tr>
<tr>
<td>SDG 12 - Sustainable Consumption and Production - Waste management and conscious consumption initiatives</td>
<td>Sustainability Indicators</td>
<td>- Lack of waste management and sustainable consumption practices</td>
<td>- Potential to implement sustainable waste management and consumption practices</td>
<td>- External pressure to adopt sustainable consumption and production practices</td>
</tr>
<tr>
<td>SDG 15 - Life on Earth - Preservation and conservation of fossils and local ecosystems</td>
<td>Sustainability Indicators</td>
<td>- Need for more preservation and conservation actions</td>
<td>- Opportunity to implement additional preservation and conservation actions</td>
<td>- Challenges associated with the protection and conservation of fossils and ecosystems</td>
</tr>
<tr>
<td>SDG 16 - Peace, justice and effective institutions - Strengthening institutions and promoting justice</td>
<td>Sustainability Indicators</td>
<td>- Weakness of institutions and law enforcement</td>
<td>- Promotion of transparency and the rule of law</td>
<td>- Political instability and social conflicts</td>
</tr>
</tbody>
</table>
Visitors are increasingly aware of their environmental impact and are more likely to support companies that prioritize sustainability. By offering sustainable practices, Parque Vale dos Dinossauros is able to attract visitors who prioritize sustainability and increase its reputation as a responsible tourist destination. Finally, implementing sustainable management practices can have a positive impact on the local economy and job creation. By investing in sustainable practices, the park can create new jobs in renewable energy, waste management and other related areas. This set of information serves as a basis for formulating strategies and actions aimed at promoting the sustainability and conscious development of the Dinosaur Park.

Based on these data and analyses, a sustainable management plan for Parque Vale dos Dinossauros is proposed, which includes:

Table 1: Sustainable Management Action Plan for Vale dos Dinossauros Park

<table>
<thead>
<tr>
<th>ODS</th>
<th>ACTION PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDG 4 - QUALITY EDUCATION</td>
<td>- Promotion of environmental education, through the demand received at the Dinosaur Park and local schools, offering a valuable opportunity for environmental education for the community. Before the scheduled visits, an environmental educator from the park will lead up to four educational workshops in schools, covering topics such as environmental preservation, biodiversity, conservation of natural resources and sustainability. During these workshops, students will participate in practical activities, such as interpretive trails and analysis of soil and water samples, aiming to promote engaged learning. The main objective is to raise students’ awareness of the importance of environmental conservation and encourage the adoption of sustainable behaviors, while encouraging critical thinking and the development of skills to solve environmental challenges, empowering them as agents of change in their communities.</td>
</tr>
<tr>
<td>SDG 6 - CLEAN WATER AND SANITATION</td>
<td>- Strategies for solid and liquid waste management, implement comprehensive environmental management strategies. Initially, carrying out a detailed survey of the main waste disposal points along the river, identifying sources of pollution and areas of environmental risk. Clear protocols will then be established for the collection, treatment and adequate disposal of solid and liquid waste, involving both the local community and the authorities responsible for environmental management. In addition, campaigns will be promoted aimed at local residents, schools and companies, highlighting the importance of reducing, reusing and recycling waste, as well as safe disposal practices. These integrated strategies aim to mitigate river contamination and promote the sustainable management of solid and liquid waste, contributing to the preservation of the environment and the health of the local community.</td>
</tr>
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</table>

- Capacity building and training for local entrepreneurship.
### Sustainable Management of the Dinosaur Valley Park: Proposal for a Plan Aligned with The Sustainable Development Goals (ODS)

| SDG 8 - Decent Work and Economic Growth | Creation of Labs to improve local and sustainable tourism entrepreneurship, in partnership with academic institutions and tourism experts. These laboratories will offer training and qualifications for local residents interested in developing sustainable businesses in the tourism sector. |
| SDG 11 - Sustainable Cities and Communities | - Social inclusion and universal access to the park, renovations and adaptations were carried out on the footprint trails to make them accessible to wheelchair users, including the installation of appropriate ramps and handrails, creating educational materials in Braille and in video format with sign language, to ensure that people with visual or hearing impairments can fully enjoy the experiences offered by the park.  
- Organize special guided tours, led by trained accessibility professionals, to ensure all visitors have an inclusive and enriching experience. |
| SDG 12 - Sustainable Consumption and Production | - Establishment of responsible visitation policies.  
- Development of ecological trails, following the example of Ubajara Park - CE, and establishment of cooperatives for local tourist guides. This will promote tourism in a sustainable way, directly involving and benefiting the community.  
- Implementation of visitor centers in park areas, using existing structures to offer information about local history, geology and fauna, as well as environmental awareness.  
- Implementation of eco-friendly transport systems, such as shared transport or ecological "Uber", encouraging sustainable mobility practices and reducing carbon emissions in the region. |
| SDG 15 - Life on Earth | - Implementation of conservation measures to protect paleontological sites. |
| SDG 16 - Peace, Justice and Effective Institutions | - Promote better relationships and partnerships to carry out paleontological research in collaboration with scientific institutions.  
- Creation of an interpretation center to publicize the park's paleontological history. |
| SDG 17 - Partnerships to Achieve the Goals | - Creation of a multidisciplinary management committee.  
- Establishment of a contingency plan.  
- Implementation of a continuous monitoring system. |

**Source:** (Author data 2023)

The implementation of these measures will not only ensure the sustainability of Parque Vale dos Dinossauros, but will also strengthen its position as an internationally renowned tourist destination, inspiring sustainable practices throughout the local community and contributing to the advancement of paleontological knowledge and conservation.

The implementation of sustainable management practices in Parque Vale dos Dinossauros also presents numerous opportunities. In this process it can provide access to financing and grants for sustainable projects. Many organizations offer funding and grants to parks that prioritize sustainability, which can help the park invest in sustainable practices. Secondly, the implementation of sustainable management practices can increase public awareness and support for sustainable practices, respecting and putting into practice the indicators located by SDG 6 - Clean water and sanitation, SDG 7 - Affordable and clean energy, SDG 8 - Decent Work and Economic Growth, SDG 11 - Sustainable Cities and Communities, SDG 12 - Sustainable Consumption and Production, SDG 15 - Life on Land, SDG 16 - Peace, justice and effective institutions and SDG 17 - Partnerships to achieve the goals.

### 4 Final Considerations

The study carried out highlights the relevance of SWOT analysis as a crucial tool in sustainable strategy and management. Its application makes it possible not only to identify strengths and weaknesses, but also to analyze opportunities and threats in the external environment, boosting not only competitiveness and profitability, but also sustainability and conscious and lasting development.
The objective outlined for this research highlights the importance of continually improving the SWOT analysis in a scenario characterized by constant innovations and technological advances. The ability to adapt and the incessant search for improvement are crucial elements to maintain competitiveness in a constantly evolving business environment.

It is essential to highlight that strategies aimed at improving administrative tools go beyond the simple search for profitability. They also aim to improve performance, long-term development and create a distinctive identity for Parque Vale dos Dinossauros, both internally and externally. Competitiveness arises naturally from this process, giving the object of study a prominent position compared to the competition.

In this context, the intervention proposal presented in this study, focused on the implementation of a sustainable management plan for Parque Vale dos Dinossauros, reflects the commitment to excellence and environmental responsibility. By integrating the principles of SWOT analysis with sustainability indicators, it becomes viable to develop effective strategies that promote the conservation of natural resources, the socioeconomic development of the region and the preservation of paleontological heritage.

Therefore, this work not only reinforces the importance of SWOT analysis as a strategic management tool, but also highlights the relevance of incorporating sustainable practices within the business sphere. By taking a holistic approach, organizations have the opportunity to not only achieve financial success, but also to contribute positively to the environment and society as a whole.

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