

DIAGNOSIS OF THE NATURAL CITY PARKS MANAGEMENT SYSTEM IN THE NORTH REGION OF RIO GRANDE DO SUL

*DIAGNÓSTICO DO SISTEMA DE GESTÃO DOS PARQUES NATURAIS MUNICIPAIS
DO NORTE DO RIO GRANDE DO SUL*

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ABSTRACT

The situation of the majority of national parks in the country remains irregular, even years after the establishment of the first Conservation Unit. New regulations and current laws still do not guarantee the best management system of these areas, which are inadequately offered to public use. The objective of this research is to evaluate the management system of Conservation Units of the category "Natural City Parks" in the north region of Rio Grande do Sul. Four factors were

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[HTTP://DX.DOI.ORG/10.11606/ISSN.2359-5361.v0i39p135-161](http://dx.doi.org/10.11606/ISSN.2359-5361.v0i39p135-161)

analyzed during the survey and diagnosis of the current management of these parks: environmental, social, economic/financial and institutional. By means of questionnaires given to managers and visits to the areas, some positive and negative aspects in each of the parks were analyzed as ways of understanding the existing problems, so that future action can be efficiently taken in order to preserve the protected areas in the north region of Rio Grande do Sul State.

Keywords: Preservation. Management. Conservation unit. Parks.

RESUMO

A grande maioria dos parques brasileiros continua irregular, mesmo depois de anos da criação da primeira Unidade de Conservação. As novas regras e leis vigentes ainda não garantem as melhores formas de gestão dessas áreas, que atualmente se apresentam ineficientes na administração e repassadas à população com qualidade ínfima de uso. O objetivo desta pesquisa se baseou em avaliar o sistema de gestão das Unidades de Conservação do tipo Parques Naturais Municipais no norte do Rio Grande do Sul, visando proporcionar um levantamento do seu atual gerenciamento através de um diagnóstico por meio da avaliação de quatro fatores: ambientais, sociais, econômico--financeiros e institucionais. A metodologia de abordagem utilizou questionários aplicados aos gestores e visitas às áreas. Os pontos positivos e negativos em cada um dos parques foram pontuados como forma de compreensão dos problemas, para que ações futuras possam ocorrer de forma eficiente na preservação das áreas protegidas do norte do estado do Rio Grande do Sul.

Palavras-chave: Preservação. Gestão. Unidades de Conservação. Parques.

1. INTRODUCTION

The term “environmental management”, according to Galvão et al. (2006), may be defined in different ways. It is frequently used to designate environmental actions in certain geographical areas, such as environmental management of watersheds, parks and forest reserves, management of environmentally protected areas, environmental management of a bio aspect reserve, among others.

According to the author, environmental management might be seen as a group of policies, programs and administrative and operational procedures, which take people’s health and security into consideration in order to protect the environment by eliminating or minimizing environmental impact and damage.

In order to achieve an efficient environmental management, all the phases need to be evaluated. These phases involve planning, implementation, operation, assessment, extension, reallocation or deactivation of activities, as well as all the phases of a product lifecycle. Figure 1 shows a diagram of the phases within the cycle of adaptive management, in which natural cycles are fed or fueled to preserve the ecosystems, motivate scientific research, environmental studies, monitor, promote environmental education, public visiting and ecological tourism and to assure the use of sustainable natural resources (RAMOS et al., 2012).

The proper management of a Conservation Unit must be supported not only by knowing the elements that compose the space, but also by interpreting the interaction among these elements. When creating a Conservation Unit, the fully understanding of its ecosystems, the natural procedures and the positive or negative anthropic interferences that influence and define them is essential. It is also important to understand men’s use of a territory and to analyze past aspects and current or future influences in order to reconcile the use of the spaces (ICMBio, 2013).

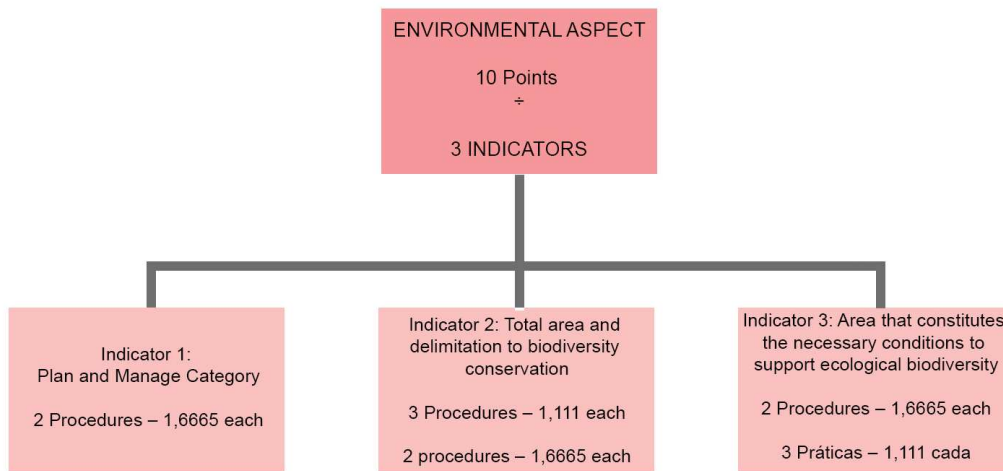


Figure 1 Conceptual Model of Management in Conservation Units
Source: Adapted by RAMOS et al., 2012.

The creation of protected areas (PAs) has been a key global strategy to ensure the conservation of the biodiversity and to respect traditional lifestyles throughout the world (LEVERINGTON et. al., 2010; CHAPE et. al., 2005; MEDEIROS, et. al., 2004; RODRIGUES et. al., 2004).

Chico Mendes Institute of Biodiversity Conservation (CMIBio), founded in 2007, established the first set of criteria and rules to create and manage conservation units. As a result, more and more conservation units have been created. On the other hand, not enough knowledge and information is available to ensure the proper management of all the units. Besides, a simple territory and legal delimitation of special regime regarding the use does not suffice to promote biodiversity conservation if there is not a proper management of these spaces (CALANDINO, 2016). Analyzing from a historical perspective, different models of management that show evident discontinuities in the management stages of the units have been implemented due to the rotation of public management over the years. These different models diluted the efforts in the search for the primary goals of these areas (SANTOS et al., 2012).

According to Oliveira (2012) environment, management effectiveness would be a necessary condition for the efficiency of the units and to promote a positive impact in the biodiversity conservation state and in the communities directly involved in using sustainable natural resources. The assessment of management effectiveness measures how conservation units protect the values that they intend to protect and how efficiently their goals and objectives are being achieved (HOCKINGS et al., 2006). To ensure that the efforts in biodiversity conservation and the use of sustainable natural resources, allied with the generation of goods and improvements in life quality, are effective in the implementation of a conservation unit, it is necessary to establish indicators capable of supporting the decision making and of helping the management of the area (RAMOS et al., 2013).

This study seeks to analyze how the management of five municipal parks in the north region of Rio Grande do Sul are provided and how they deal with the environmental, social, economic and institutional aspects within their management plans. According to NSCU (National System of Conservation Units), a Management Plan is a technical document in which the management foundations and general objectives of a Conservation Unit can be found. The document establishes the zoning and the regulations that must guide the Conservation Unit and the use of its natural resources use, including the implementation of new physical structures, if necessary (BRASIL, 2000).

2. METHODOLOGY

This article will examine the management of four municipal natural parks: Sertão Municipal Natural Park (Sertão MNP), Longines Malinowski Municipal Natural Park in the city of Erechin (Erechin MNP), Sagrisa Municipal Natural Park in the city of Pontão (Pontão MNP) and Apertado Municipal Natural Park in the city of Severiano de Almeida (Severiano MNP). The research data was collected from the analysis of both numerical indicators and procedures in four main aspects: environmental, social, economic and institutional.

STEP 1 – IDENTIFICATION AND EVALUATION OF THE ENVIRONMENTAL ASPECT

This indicator was collected and analyzed based on management, biodiversity, cultural diversity categories (relevant to the region and present in the area), and the conditions of the conservation unit regarding ecological viability (RAMOS et al., 2013). Ervin (2003), Hockings (2003) and Parrish et al. (2003) state that the evaluations of ecological integrity in the Conservation Units must consider aspects such as: integrity, viability of species, ecological processes, threats, and pressures that the conservation unit is under.

Therefore, in this study we considered the most relevant aspects of the region, the existence of these aspects in the area and the conditions of the conservation unit regarding ecological viability. Thus, number of indicators were systematized to help the assessment of the management category and the ecological viability conditions (Board 1).

Board 1 – Environmental aspect: characteristics and indicators.

I – ENVIRONMENTAL ASPECT		
Indicator 1	Indicator 2	Indicator 3
Management category		Conditions for the ecological viability of the area
Practice 1 – The conservation objectives, the management category will be observed	Practice 3 – if the area conserves representative samples of ecosystems	Practice 6 – if the area has connection among other CUs and APP.
Practice 2 – The uses that are developed in the CU and if they match with the category in use will be evaluated	Practice 4 – if the area conserves relevant natural attractives.	Practice 7 – if the zone of the CU helps ecological viability.
	Practice 5 – if the area contributes to the conservation of biology diversity.	

Source: Adapted from Ramos et al., (2012).

STEP 2 – IDENTIFICATION AND EVALUATION OF THE SOCIAL ASPECT

At this step, evaluations of the social aspects of the five parks were conducted with the use of an evaluation questionnaire to be answered by the managers in charge of each park. Aspects such as educational programs offered in the Park, available resources, kind of sustainability for the maintenance of the Conservation Unit and the way people coexist with the area were evaluated. Board 2 presents the social indicators, and the procedures selected to analyses this step.

Board 2 – Social aspect, indicators e procedures

SOCIAL ASPECT
Indicator 4 – Strategies and applications of integration of the community nearby and population in general
Procedure 8 – if the Park has a Management Board and if it makes the proper management of the area easier.
Procedure 9 – the strategies of integration between the population and the Park.
Procedure 10 – if the population nearby is involved with the implementation of strategies for continuous improvement.
Procedure 11 – if the Park and the population interact in the management.
Procedure 12 – if the community is favorable regarding the Park management.

Source: Adapted from Ramos et al., (2012).

STEP 3 – IDENTIFICATION AND EVALUATION OF THE ECONOMIC AND FINANCIAL ASPECT THROUGH INDICATORS IN THE PARKS

Step 3 consisted in identifying the economic and financial aspects of the parks. Board 3 presents the indicators selected for this step, based on the studies of Ramos et al. (2012).

Board 3 – Economic aspect, indicators and procedures

ECONOMIC AND FINANCIAL ASPECT	
Indicator 5 – The Park influences positively in the economic development of the city	Indicator 6 – The park counts on necessary financial resources for a proper management
Procedure 13 – if the population in general receives direct benefits due to the park existence.	Procedure 17 – if the park has expenses and if what kind of real costs they offer to its maintenance.
Procedure 14 – if the population nearby receives direct benefits due to the park existence.	Procedure 18 – if it has income and expenses and what they are.
Procedure 15 – if the infrastructure or services of local community interest are developed because of the Park.	Procedure 19 – if the Park counts on diverse sources of values to be received and what they are.
Procedure 16 – if there are projects for community development promoted by the Park’s administration.	Procedure 20 – if the incomes cover the costs for the Park’s maintenance.
	Procedure 21 – if there are financing sources and if they are suitable and diverse for the CU maintenance in long term.
	Procedure 22 – if there are and what are the strategies to obtain financial resources
	Procedure 23 – if there are and what are the sales of goods and services for the Park’s users.
	Procedure 24 – if there are sales of environmental services and ecotourism and what are they.
	Procedure 25 – if there is a proper management and what are the used mechanisms.
	Procedure 26 – if institutional financial management occurs and how it is done.
	Procedure 27 – if financial resources transfers occur adjusted to what is requested and how it is done.
	Procedure 28 – if there are generated resources and if they are applied to improve the Park’s management.
Procedure 29 – if the Park has mechanisms for financial controls and how they are used.	

Source: Adapted from Ramos et al., (2012).

At this step, we evaluated indicators of the institutional aspect, considering items such as planning, legislation, infrastructure, equipment, human resources and other indicators that influence the management. Board 4 contains the indicators and procedures, based on the studies of Ramos et al. (2012).

Board 4 – Institutional aspect, aspects e indicators

INDICATORS	PROCEDURES
<p>Indicator 7 – About the area having institutional conditions to its effective management</p>	<p>Procedure 30 – if strategic planning related to the politics occur and how. Procedure 31 – the coherence between necessary projects to a management plan and its execution. Procedure 32 – if monitoring and assessment occur and how corrective measures are applied. Procedure 33 – if there is a management plan and if it has updates. Procedure 34 – if the management plans are executed, how and how often. Procedure 35 –if there is an execution of the management plan.</p>
<p>Indicator 8 – About the personnel being qualified enough to develop management activities in the local.</p>	<p>Procedure 36 – if the amount of personnel is enough. Procedure 37 – if the quality of the personnel demand is enough.</p>
<p>Indicator 9 – About the area offering proper conditions to work</p>	<p>Procedure 38 – if there are conditions of hygiene and security. Procedure 39 – if salaries and benefits are being regularly paid to the staff.</p>
<p>Indicator 10 – About the structure and infrastructure satisfying the Park’s needs</p>	<p>Procedure 40 – if there is a structure that corresponds to the goals of the creation of the Park. Procedure 41 – if there are characteristics and what are the conditions of this structure. Procedure 42 –if there is infrastructure and if it is suitable.</p>
<p>Indicator 11 – About the legislation, rules, techniques and administrative provisions</p>	<p>Procedure 43 – if there is an administration and if it is supported by the Park’s management. Procedure 44 – if there are equipments and tools to work and if they are satisfactory. Procedure 45 – if the park has legal status for the area creation. Procedure 46 – if there is a regulation regarding the use of natural resources. Procedure 47 – if this regulation also covers financial management. Procedure 48 – if there is an administrative regulation. Procedure 49 – if there are laws related to planning, management and management of the Park.</p>
<p>Indicator 12 – About the mechanisms of solution, conflicts related to the domain, land possession and the use of natural resources being effective.</p>	<p>Procedure 50 – if strategies are used to solve conflicts regarding the legal domain of the land. Procedure 51 – if there are strategies and which are they to solve conflicts regarding the legal domain of the land.</p>

<p>Indicator 13 – About the area being able to count with an organizational structure proper for management.</p>	<p>Procedure 52 – if there is an organizational structure. Procedure 53 – if there is a functional system of internal communication. Procedure 54 – if there are mechanisms for registering actions to inform the CU’s management.</p>
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Source: Adapted from Ramos et al., (2013).

RESULTS AND DISCUSSIONS: METHODOLOGY

In order to systematize the collection of the indicators and to evaluate the management of 5 Municipal Parks, we created a number of indicators, following the methodology by Ramos et al. (2012) and a number of procedures that could verify the fulfillment of these indicators. To tab the data, 10 points were assigned to each procedure ranging from zero to ten where zero stands for no procedure and 10, when all procedures are fulfilled. Figure 2 shows an evaluative diagram including the indicators and values attributed according to each procedure.

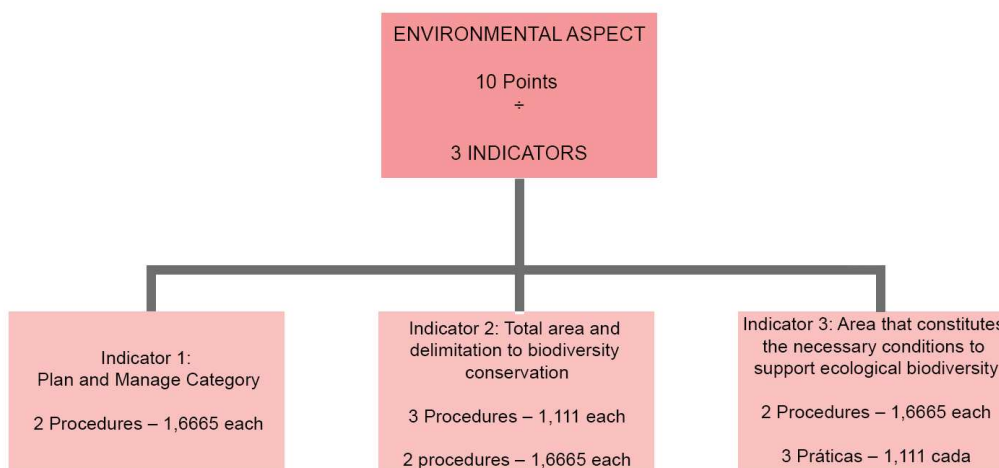


Figure 2 Evaluative Scheme
 Source: authors (2014).

The analysis of indicators was made through the use the values assigned to each procedure employed in each park, generating a table of fulfilled and non-fulfilled range of values for each procedure based on questionnaires answered by managers of the municipal parks in loco, which can be seen on Table 5.

Board 5 – Environmental Aspect Assessment

ENVIRONMENTAL ASPECT								
Práticas	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
Indicator 1 – Management Category								
P1 – Is there coherence between intrinsic characteristics, conservation goals and the management category?	1,6665	1,6665	1,6665	1,6665	1,6665	1,6665	1,6665	1,6665
P2 – Do the uses developed in the CU match with the use category?	1,6665	0,00	1,6665	0,00	1,6665	0,00	1,6665	1,6665
SUB-TOTAL	3,333	1,6665	3,333	1,6665	3,333	1,6665	3,333	3,333
Indicator 2 – Total area and delimitation for the biodiversity conservation								
P3 – Does the area conserve representative samples of relevant ecosystems of the region?	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
P4 – Does the area conserve relevant natural attractives to the region?	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
P5 – Does the area contribute to the biological diversity conservation?	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
SUB-TOTAL	3,333	3,333	3,333	3,333	3,333	3,333	3,333	3,333
Indicator 3 – Area that constitutes the necessary conditions to support ecological viability								
P6 – Does the area have connections between CU and other areas of environmental preservation?	0,00	0,00	0,00	0,00	1,6665	1,6665	0,00	0,00
P7 – Does the CU zone support an ecological viability?	0,00	1,6665	1,6665	1,6665	0,00	1,6665	1,6665	1,6665
SUB-TOTAL	0,00	1,6665	1,6665	1,6665	1,6665	3,333	1,6665	1,6665
Total score in cities	6,666	6,666	8,3325	6,666	6,1105	8,3325	8,3325	8,3325

Source: authors (2014).

Figure 3 shows the maximum score achieved in each MNP, according to the indicators.

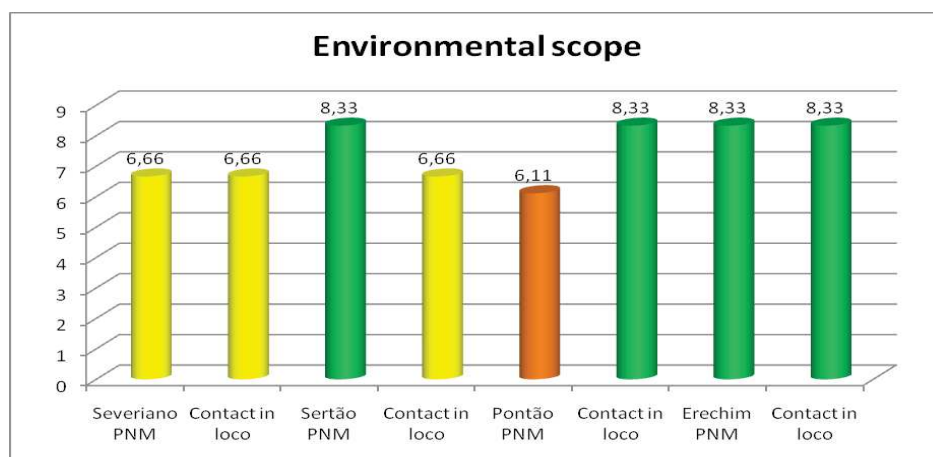


Figure 3 Demonstrative Graphic of maximum score achieved to each MNP
Source: authors (2014).

In Board 5, we can see that that Sertão MNP and Erechin MNP scored 8,33 points of a maximum of 10,0 points divided into two indicators of Management Category: total area of delimitation for biodiversity conservation and area that fulfills the necessary conditions to support ecological viability.

Some of the parks scored close the maximum in indicators 1, 2 and 3 while the Municipal Pontão MNP scored 6,11 points and the Severiano MNP 6,66 points, the minimum value of these indicators.

Most of the area of the Municipal Natural Park of Apertado is located in a permanent preservation area, legally characterized as maximum restriction constituted and located in permanent preservation areas (PPA), such as steep slopes, tips of hills, springs and shores of hydric spots.

The indicators of the environmental aspect were analyzed during visits to the parks, following the procedures employed to each indicator in the environmental aspect. Figure 4 shows photos taken during the visit to Erechin MNP.

The analysis consisted of taking pictures of relevant moments or details, as well as verifying documents like the Management Plan of the park and restrictions of use of the neighboring area. As can be seen in figure 04, Pontão MNP Erechin MNP's had a maximum score of 8,33 while Sertão and Severiano MNP's hit 6,66 points.

Figure 5, shows the Erechin Municipal Natural Park. In that park, the following indicators are being met: management category, delimitation area for biodiversity delimitation and area that constitutes the necessary conditions to support ecological viability.

The interview with the manager in charge of Apertado Municipal National Park along with a documental analysis revealed that the area has many fragments of Atlantic forest residues that are going through different phases of reconstruction of its ecological succession.



Figure 4 Photos of MNPLM in employed procedures in indicators of Environmental Aspect. Source: authors (2014).



Figure 5 Photos of MNPA in employed procedures of indicators in Environmental Aspect. Source: authors (2014).

The social aspect was analyzed based on the vision of the managers regarding employed procedures through three indicators and seven procedures – each procedure corresponded to one question in the questionnaire. Figure 6 shows the explanatory process or how the social aspect was identified.

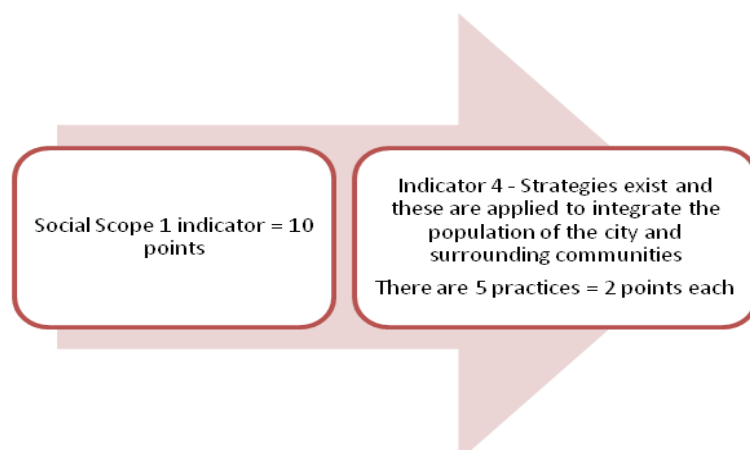


Figure 6 Explanatory Scheme
Source: authors (2014)

The indicators were accessed based on each procedure employed, generating a table of fulfilled and non-fulfilled range of values, as presented in Board 6.

Board 6 – Social Aspect Assessment

SOCIAL ASPECT								
Indicator 4 – Strategies exist and are applied to the interaction of the population of the city and communities nearby								
Práticas	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P8 – Does the Park have Management Board and does it help to make proper management in the area?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P9 – Does CU have strategies of integration between the population and the CU?	0,00	0,00	2,00	0,00	2,00	0,00	2,00	2,00
P10 – Is the population nearby involved with the implementation of strategies to continuous improvement?	2,00	0,00	0,00	0,00	0,00	0,00	2,00	2,00

P11 – Do CU and local communities make joint actions?	2,00	2,00	0,00	0,00	2,00	2,00	2,00	2,00
P12 – Does the community express attitudes that support the management of CU and areas nearby?	2,00	0,00	2,00	0,00	2,00	0,00	2,00	2,00
Total score for each city:	6,00	2,00	4,00	0,00	6,00	2,00	8,00	8,00

Source: authors (2014).

Table 6 shows the results, displayed in a maximum score of 8 points and minimum of 4. Figure 7 shows the maximum and minimum values obtained.

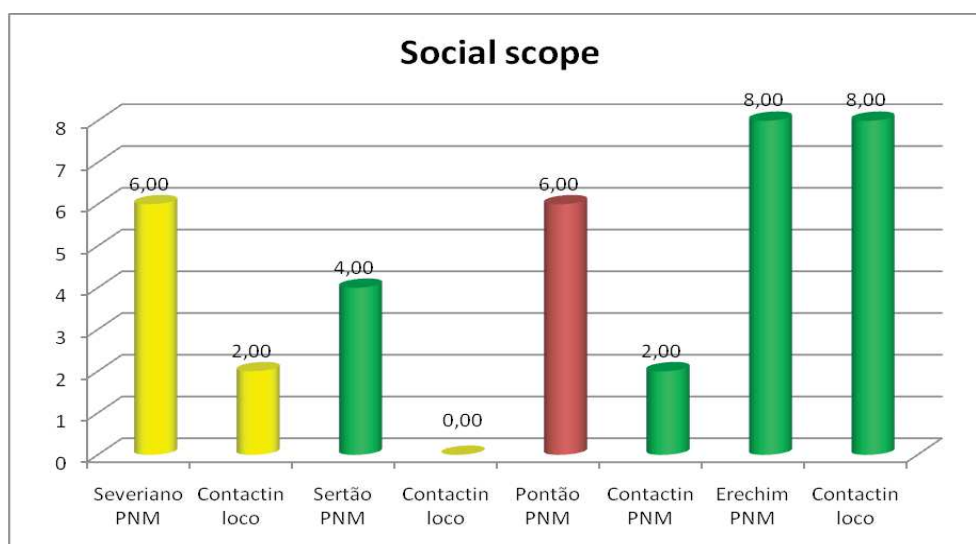


Figure 7 Demonstrative Graphic of maximum score in each MNP

Source: authors (2014).

The table shows that Erechin MP scored 8,00 points of the procedures asked, while Severiano MP and Pontão MP reached 6,00 points. Sertão MP reached only 4,00 points for meeting the procedures present in the indicator. The questions addressed the existence of strategies and if they were applied to integrate the population of the city and communities nearby.

At the social assessment stage as well as in the environmental aspect, we also found that the procedures of each indicator were employed. The analysis consisted in taking pictures of relevant moments and details, as well as verifying documents such as the Management Plan of MNP and restrictions to use neighboring areas. In Figure 8 we can see pictures that show the employment of procedure 9 of that indicator.

According to what was observed in Board 6, only Erechin MNP reached a maximum score of 8,00 points to the requested procedures, while Severiano MNP and Pontão MNP reached only 2,00 points.

According to what is shown on Board 6 and Figure 8, Municipal Natural Park of Sertão did not employ any of the procedures because it did not demonstrate disposition in fulfilling the social aspect.



Figure 8 Photos of MNPLM in employed procedures in indicators of Social Aspect
Source: authors (2014)

Figure 8 shows the community interaction with Erechin MNP. This happens by meeting the requested procedures in the social indicator. According to the biologist in charge, the place has been going through a structuring process. We also verified that the social requirements are met, as the park is located in an urban zone of the city, receiving students and visitors from the city and the area. Sertão MNP, however, did not meet any of the mentioned social procedures in the requested indicator, since it is located in the countryside.

Pontão and Severiano MNP's fulfilled only requirement 11, as the community takes part of the decisions regarding the park, but with a low level of involvement, since there is no effective monthly control of regular meetings with the community. According to the

managers of the park and to the evaluation of the procedures employed in the park, there is a need for the school community and the municipalities in general to speak up about the parks and to help them in a joint management.

Regarding the economic and financial aspect, the vision of managers on the procedures employed were evaluated during the visit in loco.

In Figure 9 we can see an explanatory diagram identifying in the economic and financial aspect.

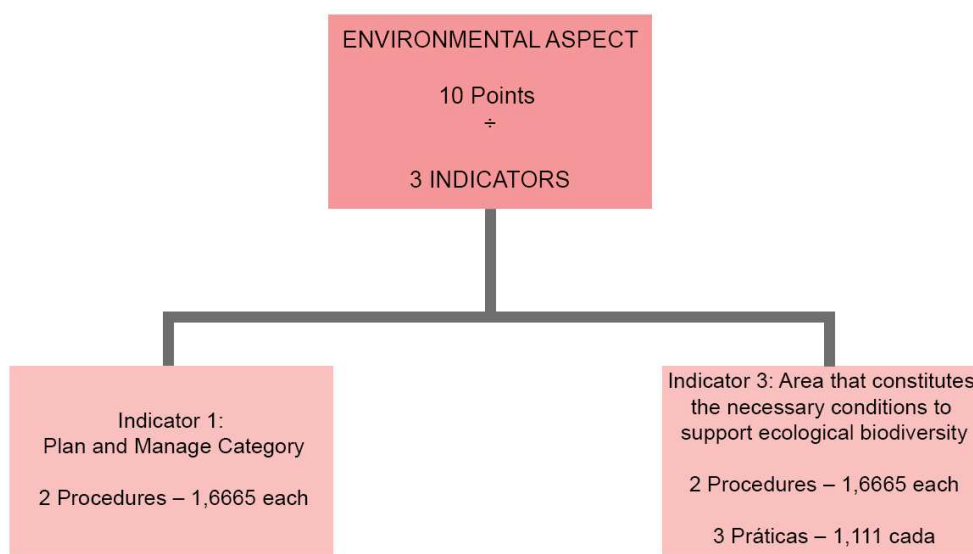


Figure 9 Explanatory Scheme
Source: authors (2014)

The assessment of the indicators was conducted by the use of values attributed in each procedure employed to each park, generating a table of fulfilled and non-fulfilled range of values, with their respective punctuation, according to Board 7. The visit in loco also helped the group verify if the parks employed or not the requested procedure.

Board 07 – Assessment in the economic and financial aspect

ECONOMIC AND FINANCIAL ASPECT								
INDICATOR 5 – CU influences positively in the economic development of the local city and of the population nearby								
Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P13 – What direct and indirect benefits do the population nearby and the population in general receive because of the existence of the CU?	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25

P14 – Does the CU contribute to upgrade the income of the local population?	0,00	1,25	0,00	1,25	0,00	1,25	0,00	1,25
P15 – Are the infrastructure and services of interest of the local community developed because of the CU?	0,00	0,00	0,00	0,00	1,25	0,00	0,00	0,00
P16 – Are there projects of community development promoted by the CU administration?	0,00	0,00	0,00	0,00	1,25	0,00	0,00	0,00
Total score by park	1,25	2,5	1,25	2,5	3,75	2,5	1,25	2,5

INDICADOR 6 – CU counts with necessary financial resources for a proper management

Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P17 – Is there any real cost of the CU maintenance?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P18 – Are there income and expenses?	0,00	0,00	0,00	0,00	0,00	0,00	0,3846	0,3846
P19 – Are there diverse sources to receive values?	0,00	0,3846	0,00	0,3846	0,00	0,3846	0,00	0,3846
P20 – Does the income cover the CU maintenance costs?	0,00	0,00	0,00	0,00	0,00	0,00	0,3846	0,3846
P21 – Are the financing sources suitable and diverse for the CU maintenance in long term?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

INDICADOR 6 – A UC conta com recursos financeiros necessários à gestão adequada

Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P22 – Is there any strategy to obtain diverse and enough financial resources?	0,00	0,00	0,00	0,00	0,3846	0,00	0,3846	0,00
P23 – Are goods and services offered to direct users of the CU?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

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P24 – Are there sales of environmental services?	0,00	0,00	0,00	0,00	0,00	0,00	0,3846	0,00
P25 – Does institutional financial management occur?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P26- As the base of a proper management, what are the efficient mechanisms for a financial management?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P27 – Do transfers of adjusted financial resources occur as it is requested?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P28 – Are the generated resources applied in management improvement or in the management plan of the CU?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
P29 – What are the mechanisms of control and audit to a good financial management?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total score by park	0,00	0,3846	0,00	0,3846	0,3846	0,3846	1,1538	1,1538
Total score in each city	1,25	1,6346	1,25	2,8846	4,1346	2,8846	2,7884	3,6538

Source: authors (2014).

Pontão MNP scored 4,13 points of a maximum of 10,0 points divided into indicators and requested procedures. Erechin MNP had the second best result with 2,78 points out of 10,0 points of the totality of employed procedures in the requested indicators.

According to the managers' responses to the questions in Board 8, Severiano MNP and Sertão MNP had the worst results.

Figure 10 show the maximum score achieved by each MNP, according to the indicators assessed.

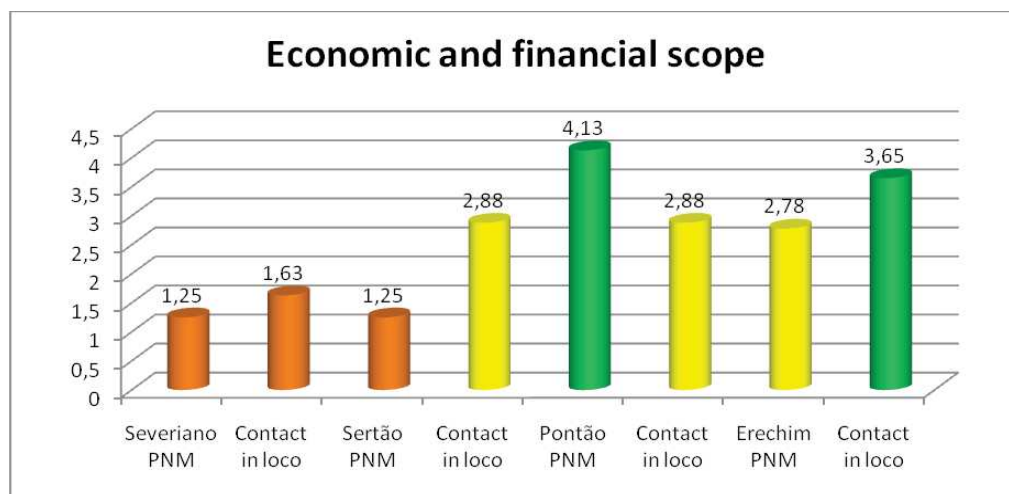


Figure 10 Demonstrative Graphic of the Maximum Score reached in each MNP
Source: authors (2014).

The improvements and investments are being made in Erechin MNP, since we can see that there is no accumulation of residues along the trails and the user is informed that they are in a conservation unit.

The manager informed us that R\$ 500.000,00 are estimated to be received to be employed in environmental, social, economic and institutional procedures.

Regarding the visit, only one park (Erechim MNP) had the maximum score of 3,65 points, two parks (Sertão MNP and Pontão MNP) had 2,88 points from a maximum of 10,00 points. Pontão MNP showed more investments in activities, primarily investing in the visualization of the area. In spite of having a Management Plan and the participation of students in practical activities classes of Environmental Education, it is possible to see that the place has been neglected to a some extent. Figure 11 shows the photographs taken during the visit to Erechin MNP. The investments are focused on infrastructure and assistance to the public, even though the management plan has been done for two years.

Erechim MNP management plan dates back to 2011 and was executed in the year of 2014. During the visit in loco, the manager and the biologist in charge declared that the removal of exotic trees and paving of the trails, as well as the enclosure and pavement for the athletes to enjoy the space will take place.

Besides the fact that the park is inserted into an urban area, it is a place of fresh air and great possibilities to become much more visited in the next few years.

The current management stated that, after the investment, the park will be ready to receive and it will turn it into a full-time protection park and a reference in the region. In the institutional aspect assessment, the managers' vision was analyzed according to the questionnaire and the visit in loco, which analyzed the employed procedures.

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Figure 11 Photos of MNPLM in attended procedures in indicators of economic and financial aspect
Source: authors (2014)

Figure 12 presents an explanatory scheme on the identification of the institutional aspect.

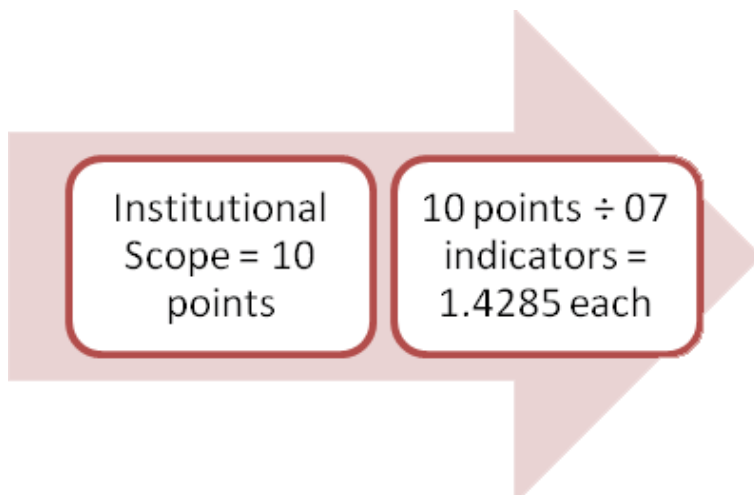


Figure 12 Explanatory Scheme
Source: authors (2014)

According to the managers' responses, organized on Board 14, Erechin MNP 5,11 points out of 10,0 divided in the indicators of the requested procedures. Severiano MNP had the second best result with 4,11 points

The worst results in the institutional aspect belonged to the Sertão MNP and the Sagrisa Municipal Natural, where few of the questioned procedures were employed.

Board 8 shows the indicators and assessed procedures in the institutional aspect.

Board 8 – Assessment in Institutional Aspect

INSTITUTIONAL INDICATOR								
Indicator 7 – About the area having institutional conditions for effective management								
Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P30 – Does a strategic plan related to the established policies for the CU system occur?	0,2380	0,00	0,238	0,00	0,00	0,00	0,2380	0,2380
P31 – Are the necessary plans and projects coherent with the management plan?	0,2380	0,00	0,00	0,00	0,2380	0,00	0,2380	0,2380

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P32 – Do monitoring and assessment of the adjustments to be done in long term occur?	0,00	0,00	0,00	0,00	0,00	0,00	0,2380	0,2380
P34 – Does the management plan consider the initiatives for local or regional development?	0,00	0,00	0,00	0,00	0,2380	0,2380	0,2380	0,2380
P34 – Does the management plan consider the initiatives for local or regional development?	0,00	0,00	0,00	0,00	0,00	0,2380	0,2380	0,2380
P35 – Is there any execution of the management programs?	0,00	0,00	0,00	0,00	0,00	0,00	0,2380	0,2380
Total of points by indicator	0,476	0,00	0,238	0,00	0,476	0,476	1,428	1,428

Indicator 8 – Personnel qualified and enough to develop the local management activities

Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P36 – Is the personnel amount enough?	0,00	0,7142	0,00	0,7142	0,00	0,7142	0,00	0,7142
P37 – Is the quality of personal demand enough?	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,7142
Total of points by indicator	0,00	0,7142	0,00	0,7142	0,00	0,7142	0,00	1,4284

Indicador 9 – A área oferece condições adequadas de trabalho

Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P38 – Are there hygiene and safety conditions?	0,00	0,00	0,00	0,00	0,7142	0,00	0,7142	0,00
P39 – Are wages and benefits paid to employees in accordance?	0,00	0,00	0,00	0,7142	0,00	0,7142	0,00	0,7142
Total of points by indicator	0,00	0,00	0,00	0,7142	0,7142	0,7142	0,7142	0,7142

Indicator 10 – About the structure and infrastructure (existing equipment) satisfying the CU management needs								
P40 – Is there a structure that corresponds to the goals of the park creation?	0,3571	0,00	0,00	0,00	0,00	0,3571	0,3571	0,3571
P41 – Is there infrastructure and is it appropriated?	0,00	0,00	0,00	0,00	0,3571	0,3571	0,3571	0,3571
P42 – Is there any access and does it fit in the park's goals?	0,3571	0,3571	0,00	0,3571	0,00	0,3571	0,00	0,3571
Total of points by indicator	0,7142	0,3571	0,00	0,3571	0,3571	1,0713	1,0713	1,0713
Indicator 11 – About the legislation, rules techniques and administrative provisions								
P43 – Is the administration supported by the CU management?	0,000	0,00	0,00	0,00	0,00	0,00	0,2040	0,2040
P44 – Are there equipment and tools for the job and are they enough?	0,2040	0,00	0,204	0,00	0,2040	0,00	0,2040	0,2040
P45 – Is there legal status of the area creation?	0,2040	0,2040	0,204	0,2040	0,2040	0,2040	0,2040	0,2040
P46 – Is there any regulation for the use of the natural resources?	0,2040	0,00	0,00	0,00	0,2040	0,00	0,2040	0,2040
P47 – Does this regulation also cover financial management?	0,00	0,00	0,00	0,00	0,00	0,00	0,2040	0,2040
P48 – Is there an administrative regulation?	0,2040	0,2040	0,00	0,2040	0,00	0,2040	0,2040	0,2040
P49 – Are there laws related to the planning, management and management of the park?	0,2040	0,2040	0,204	0,2040	0,2040	0,2040	0,2040	0,2040
Total reached by indicator	1,02	0,612	0,612	0,612	0,612	0,612	1,428	1,428

Indicator 12 – About the mechanisms for solution, conflicts related to the domain, land possess and effective use of natural resources								
Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P50 – Are strategies to solve conflicts related to the legal domain of the land used?	0,7142	0,00	0,714	0,00	0,00	0,7142	0,00	0,00
P51 – Are strategies to solve conflicts related to the use of CU resources used?	0,7142	0,00	0,714	0,00	0,00	0,00	0,00	0,00
Total of points by indicator	1,4284	0,00	1,428	0,00	0,00	0,7142	0,00	0,00
Indicator 13 – About the area counting on an organizational structure proper for management								
Questions	MNP Severiano	Confirmation in loco	MNP Sertão	Confirmation in loco	MNP Pontão	Confirmation in loco	MNP Erechim	Confirmation in loco
P52 – Is there an organizational structure?	0,4761	0,00	0,476	0,00	0,00	0,00	0,4761	0,4761
P53 – Is there a functional system for internal communication?	0,4761	0,00	0,476	0,00	0,00	0,00	0,00	0,00
P54 – Are there mechanisms for registering actions to inform the CU management?	0,00	0,00	0,476	0,00	0,00	0,00	0,00	0,00
Total of points by indicator	0,9522	0,00	1,428	0,00	0,00	0,00	0,4761	0,4761
Total score	4,1148	1,6833	3,706	3,1117	2,3633	4,3297	5,1176	6,546

Source: authors (2014).

Figure 13 presents the maximum score attended to each MNP according to the indicators.

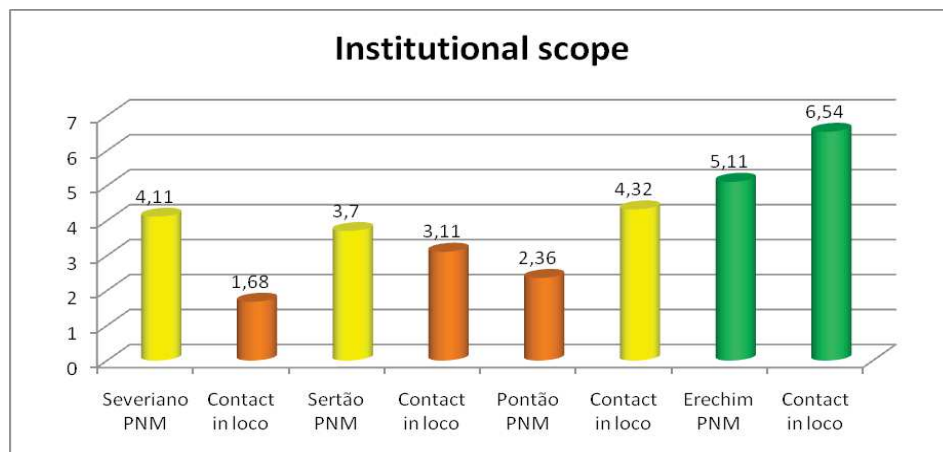


Figure 13 Demonstrative Graphic of the Maximum Score Attended for each MNP
Source: authors (2014).

The numbers suggest the existence of Management Plans in the parks Erechin and Pontão MNP. Although obsolete, both still obey procedures regarding the requested indicators in the institutional aspect.

Meanwhile Severiano and Sertão MNP have the same results, they do not employ many of the requested institutional procedures.

The visit revealed the employment of the procedures of each indicator in the institutional aspect. The analysis consisted in taking pictures of relevant moments or details, as well as verifying documents and interviewing managers.

In Figure 14 we can see photos of specific parts of the park, in its physical integrity, with a variety of natural aspects observed in the Severiano MNP. Details of the photos were verified and can be seen on Figure 14, some places present natural burn regeneration. However, being a municipal natural park of full protection, the care with the natural habitat must be as high as possible.

Moreover, we could verify that the park does not have a Management Plan, which makes its management vulnerable, as well as the restrictions in use.

According to the statement of Severiano de Almeida MNP director and the visit in loco, some places have suffered burns and there are evidences of hunting and fishing. The manager has informed that problems related to the neighbors happen all the time and the community does not realize how important the preservation of the place is.

The assessment of the results obtained in all the parks, in different aspects evaluated, is shown on Board 14.



Figure 14 Photos of Severiano de Almeida MNP in procedures attended in indicators in Institutional Aspect
Source: authors (2014)

Board 14 – Board of general score obtained according to the managers’ responses

Score obtained according to the managers’ responses				
ASPECT	PARKS			
	MNP/ Sertão	MNP/ Sagrisa	MNP/ Severiano de Almeida	MNP/ Erechim
Environmental	8,33 *	6,11	6,66	8,33*
Social	8,33*	6,11	6,66	8,33*
Economic/ Financial	1,25	4,13*	1,25	2,78
Institutional	3,7	2,36	4,11	5,11*
General Score	21,61	18,71	18,68	24,55*
Maximum of general score 40,00 Minimum of general score 0,00				

Source: authors (2014)

Regarding the managers' answers, the best results were observed in the Sertão MNPS and in the Erechin MNP, with 8,33 points, both in the environmental and social aspects in all the evaluated indicators. However, in the economic and financial aspect, Pontão MNP got the best result: 4,13 points. In the institutional aspect, Erechin MNP was highlighted for pointing 5,11 and obtained maximum general score with 24,55 points.

On Board 15 it can also be observed the general result in the score obtained in the observation in loco.

Board 15 – Board of general score obtained according to the observation in loco

Score obtained according to the observation in loco				
ASPECT	Score obtained according to the observation in loco			
	MNP/ Sertão	MNP/ Sagrisa	MNP/ Severiano de Almeida	MNP/ Erechim
Environmental	6,66	8,33*	1,68	8,33*
Social	6,66	8,33*	1,68	8,33*
Economic/ Financial	2,88	2,88	1,68	3,65*
Institutional	3,11	4,32	1,68	6,54*
General Score	19,31	23,86	6,72	26,85*

Maximum of general score 40,00
Minimum of general score 0,00

Source: authors (2014)

According to the verification provided in loco, Pontão MNP and Erechin MNP show the best results concerning the environmental and social aspect. The maximum score was 26,85 points in all the aspects evaluated.

4. CONCLUSION

The research showed that all the parks in the north region of the state need special attention from their managers, as well as higher financial investments, so that continuous management improvement can be supported. Furthermore, we observed that the conservation units studied that have a Management Plan employ bigger number of procedures, having a positive sum as a result of the four aspects assessed.

The results highlight the importance of these areas in the environmental aspect, however, the study shows adjustments to a more linear management since the results pointed out that the procedures evaluated were irregularly employed in the evaluated areas. During this study, we observed the need to review the management of these parks to enable all procedures pointed in the adopted methodology to be contemplated in the indicators and aspects evaluated.

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