Analysis of the Key Indicators of Sustainable Tourism: A Case Study in Lagoa da Confusão, Brazil

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Abstract— From the start, the importance of having a plan to sustain tourism was acknowledged. The correct methods to monitor that type of tourism have been researched. Thus, we propose in this work to analyze the applicability of a monitoring and and assistance method on the understanding of the tourism sustainability in a small size destiny or getaway. In this study, the subject is Lagoa da Confusão, in the state of Tocantins and the analysis was carried out through the efficiency of the local indicators, according to the WOT approach. We concluded that the sustainable tourism key points that were analyzed demonstrated to be important evaluation and quantification tools for the proposed tasks to be developed in the mentioned destiny. This is a study of an interdisciplinary character and the deductive method was chosen as the guiding line.

Keywords—Indicators, Lagoa da Confusão, Tocantins, Brazil, monitoring, sustainability.

I. INTRODUCTION

TOURISM, as an idea of sustainable development, shall be exploited from the 80s when it was a consolidated activity worldwide, presenting results of economic growth and social development. Paradoxically, allied to this factor of development, were the first negative results of this activity. The socio-cultural impacts and consequences on the natural environment began to show, implying a new view of discussion on tourism, which should be linked to not only the economy but also the environment and social.

Tourism, as an idea of sustainable development, was exploited since the 80s, when it was a worldwide consolidated activity that presented economic growth and social development results. In a paradoxical way, the first negative results of that activity appeared, although allied to the development factor. This new perspective about tourism is governed by the principles contained in Our Common Future document published in 1987, which involve a proper planning, together with a constant monitoring and an evaluation process that\ would provide a reduction of the negative impacts through long-term strategies.

Since the importance of planning sustainable tourism was recognized, effective methods of monitoring tourism have been discussed. In this sense, the indicators can transmit information about complex processes, events, or trends. Thus, they can be considered as important monitoring tools for the evaluation of the environment, thus helping to identify its progress and outline actions that will contribute to decision making [1].

The World Tourism Organization - WTO recognizes the importance of indicators to appraise the tourism activity in the point of view of sustainability, and launched in 1995 eleven (11) Key Indicators of Sustainable Tourism to assist in the monitoring of tourist destinations. The indicators can be applied in any location, once a methodology that meets the demands of each tourist destination is adopted [9].

There have been many debates about tourism and sustainability in the scientific community, emerging from them there are some models that seek to analyze and plan the new tourism that presents itself as a myth (illusion, ghost or camouflage), i.e. an activity that is able to solve present and future problems [15]. WTO indicators represent the key points of sustainable tourism, being a system composed of social, economic, cultural, and environmental elements. Therefore, to have a vision of sustainability of this activity, these elements must be analyzed [16], [17].

Taking into account what was mentioned above, the following research proposes to understand the complexity involved in the monitoring of tourism focusing on some key indicators of sustainable tourism proposed by the WTO.

The accomplishment of the research was based on the questions: How to monitor and understand a small tourist destination sustainability? It was considered as a small tourist destination "urban tourist destinations peripherals, with lower populations, minor in its center and with a tendency function to receive more than generating tourists" [12]. Can we say that the key indicators of sustainable tourism proposed by the WTO, when applied and analyzed, can be monitoring tools and support in understanding the tourism sustainability of these destinations?

We start the research taking into account that it is possible to monitor and understand the sustainability of the destination under study through the indicators in question. Therefore, we chose a case study to investigate this hypothesis and the survey was conducted in the State of Tocantins, Brazil. The tourist destination that was the object of this work is "Lagoa da Confusão", a small town located near two important protected areas in the state: Araguaia National Park and Araguaia Indian Territory Park. This study selected seven key indicators of sustainable tourism proposed by the UNWTO and applied them in the city of Lagoa da Confusão (considering the urban area): Attraction Protection–AP (level of a natural and cultural attraction protection), Sociocultural Impact–SI (level of socio-cultural impacts), Waste Management-WM (level of management of generated solid

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waste), Planning Process - PP (trip planning level) Tourist Satisfaction-TS (satisfaction of the tourist experience), Community Satisfaction - CS (satisfaction of the local community with the development of local tourism) and Tourism Contribution to the Local Economy-TCLE (tourist level of contribution to the local economy). These indicators were analyzed comprising the various key points of the local tourism sustainability. The indicators were measured through specific methodologies that were adapted to the local study, so that they would generate quantitative results that could be analyzed by the WTO proposed scale

II. THE LAGOA DA CONFUSÃO CITY

The territory of the municipality has an area of 10,564.661 km2 and 11.859 inhabitants. It is situated in the western region of the State of Tocantins, Brazil, at the geographical coordinates 10º47'37"S latitude and 49º37'25"W longitude, on the right bank of the Araguaia River. The city is 184 km from the State capital of Palmas [7].

Fig. 1 Lagoa da Confusão location map

The origin of the municipality dates back to 1933, with the arrival of "pioneers", giving rise to the village and later, to the city of Lagoa da Confusão. The name of the city, in a free translation means "Confusion Lagoon". It has two explanations: the first, and most accepted by the locals, is that the access to the site was very difficult; the first "pioneers" faced many difficulties and confusion until they reached the pond's edge. The lagoon and the resort were then named after that confusion. The second version is the fact that there is a boulder in the lagoon and, with the incidence of the sunlight and the vegetation in the background; one may have the impression that the rock sometimes "appears" and sometimes "disappears". This version of the story is told by the local people and also used as a tourism marketing issue [18].

The city is in a region that is characterized by the transition between the savannah and the Amazon rainforest. It presents itself as a propitious environment to tourism development. There is much tourism potential that attracts people from the entire region, and there is also a basic tourism infrastructure. The city receives about 30 thousand people during summer and holiday seasons.

The natural attractions of the region are characterized by rivers, lakes, caves, mountains and several species of fauna

and flora of the cerrado vegetation and the Amazon rainforest. The main tourist attraction of the city is the lagoon (see Fig. 2), with 4.5 km in diameter, maximum depth of 3 meters, a diverse vegetation and marshy formations, surrounded by shallow waters and fine sandy beaches. It features a large rock (see Fig. 3), as mentioned previously, catches visitors` attention and curiosity.

Fig. 2 Lagoa da Confusão

Fig. 3 Pedra da Confusão

The Araguaia National Park, a federal site of integral protection of natural resources, lies within the municipality of Lagoa da Confusão. It is located in the Bananal Island (considered the largest river island in the world), with a total area of 562 312 hectares. It incorporates 370 000 hectares of the Boto Velho Indian Reservation.

III. KEY USE OF INDICATORS TO MEASURE SUSTAINABLE TOURISM

In the 80s, amid the discussions about sustainability, some proposals for the development of environmental indicators came out, in order to provide contributions to the formulation of national policies and international agreements, as well as the public and private actors` decision-making. The proposal also had the purpose of giving a greater materiality and functionality to the concept of sustainability, through the description of the interaction between the human activity and the environment [4].

An indicator can be defined as "one of the ways to measure progress, some types of changes or developments, or a way of measuring variations in measurement of a specific target" [11]. It can be classified into several categories [6].

- Application level: indicators may be in a project level, state level, national or global level;
- Area of application: can be applied to economic and environmental areas, among others. In the environmental area, it may only be to calculate the quality of the air, the

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water, the environmental disaster occurrences, the depletion of natural resources, the impact on human health, the biosphere, or related businesses. They can also be divided into four categories, according to the indicator activity: economy, efficiency, manpower, impact on the environment.

- Qualitative or quantitative representation: can be represented in the form of data, graphics, maps, pictures, or diagrams.

To define an indicator, one needs to consider some important features such as: the indicator should be relevant to the evaluation of the system; it must have validity, objectivity and consistency; it has to be consistent and sensitive to changes in time and system; it has to be centered on practical and clear aspects, it has to be easy to understand and contribute to the participation of local people in the measurement process; it must allow integrative approach, i.e. provide condensed information on various aspects of the system; be easy to measure, based on readily available and low cost information; it must allow broad participation of the actors involved in their definition; it must allow the correlation with other indicators, facilitating interaction between them [5].

Currently, the researchers have been using indicators in order to bring accurate information about the sustainability of a system. As the concept of sustainability is uncertain and generates much controversy, some well-known international organizations as the Organization for Economic Cooperation and Development - OECD and the Commission on Sustainable Development - CSD, set up under the UN, seek to provide reliable indicators of sustainability, enabling analysis and support in making policy decisions.

In the field of tourism, the WTO, through a series of case studies, selected a few key points that represent the combination of elements that support the assessment of the sustainability of a tourist destination and, through these elements, created the key indicators of sustainable tourism, with the purpose of reducing the risk of making wrong decisions that could harm the environment and the local culture.

The identification and evaluation of the indicators can serve to show the specific cause and effect relationship between tourism and the environment. In addition, the indicators can also manifest the effects and impacts of tourism activities [9]. Through these indicators, tourism managers will be better able to identify emergency issues, which will allow protection and mitigation; identify impacts, which will facilitate the development of actions before the problems occur; support the development of sustainable tourism, identifying limits and opportunities; foster the accountability of managers by promoting the adoption of responsible decisions supported by knowledge [9].

The indicators proposed by the WTO are designed to give managers a better understanding of the actions of the tourism on the environment, thus allowing a more careful identification of the potential problems. Therefore, managers will be better able to make the necessary decisions to reduce the risk of degradation of the attractions and their natural and cultural surroundings. This organization poses a number of key indicators to a sustainable tourism so that one knows how the sustainability of tourism in a destination is being processed. It is necessary that these key points are measured as they reflect the situation of all the elements that make up the tourism system. Their application should be adapted in each location to be measured. To do so, one must select specific items for each indicator.

All items selected to compose the key- indicator proposed by the WTO must receive scores. The scoring methodology should be selected by the local manager, who chooses a reliable method. The WTO suggests that the indicators should have scales ranging from 0 to 10 points:

TABLE I
KEY INDICATORS OF SUSTAINABLE TOURISM

Indicator	Description
Attraction Protection (AP)	It ranks the tourist attraction protection level
Intensity of the Use (IU)	It identifies the intensity of tourist attraction in use by its loading capacity
Social Impact (SC)	It indicates the effect on the tourist community
Control of the Development of Tourism (CDT)	It determines the destination tourism planning level
Waste Management (WM)	It indicates whether there is a treatment and an adequate control of the waste in the municipality that hosts the flow of tourists or not.
Tourist Satisfaction (TS)	It demonstrates the level of the tourist`s satisfaction of what is the tourist offered (lodging, restaurant, entertainment, local traffic, responsiveness and attractions)
Community Satisfaction (CS)	It indicates the level of satisfaction of the local community with the tourism.
Contribution of Tourism to the local Economy (CTLE)	It indicates the level of contribution of the tourism to the local economy during seasons
Pressure (P)	It indicates the level of pressure from tourists about the place
Critical Ecosystem (CE)	It indicates the level of vulnerability of the local fauna and flora
Pressure (P)	It indicates the level of pressure from tourists about the place

IV. ANALYSIS OF THE KEY INDICATORS OF SUSTAINABLE TOURISM IN LAGOA DA CONSUSÃO

A. The Tourist Satisfaction Indicator

The research applied 558 questionnaires to tourists: 80 in June/2005, 196 in September/2005, 80 February/2006 and 202 in April/2006. The questionnaire consisted of closed questions, which were presented in a set of alternatives, in which the respondent chooses his/her opinion about the tourism of the city. The questionnaire was divided into two parts. The first part had 22 questions with answers ranging in a scale from 0 to 10 plus two (2) questions to be answered with an X. The second part had questions about the tourist profile: 15 questions to be answered with an X.

The tabulation of the questionnaires was done by the SPSS system version 10.0 that enables the creation of statistical data and also their analysis. To calculate the indicator we considered only the 22 first questions. The other questions were used as a supplement to analyze the tourist profile. The methodology used to calculate the grades (scores) assigned in the questionnaire responses was the methodology suggested

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by the WTO, in which the answers range from 0 to 10. Some criteria are established for the scores, in order to equalize their concepts. The tourist should opt for a score from 0 to 4 representing a concept of "Poor"; from 5 to 7 meaning "Satisfactory" or from 8 to 10 for "Excellent".

The grades were calculated as follows: For each question, the values of the grades given by each respondent were added; the result was then divided by the number of respondents thus obtaining the average grade for each question. Then, the average of the answers of each question was done and the result was divided by 22 (total number of questions that make up the indicators). The resulting value is the overall average score of the questionnaires, i.e. the value of the indicator. Tourists who were interviewed were staying in camping areas or in hotels, lodges, and clubs. The research sought to test the responses of these two groups, in all periods of the data collection, in order to verify if they assessed the items differently. The methodology consisted of applying the Mann Whitney test among the average scores given by the campers and guests of hotels, guesthouses, and clubs. The test consists of a non-parametric statistical technique and qualitative data analysis. It is used to test if two independent samples were taken from populations with the same average. The test enabled us to verify the hypotheses that the marks given by the campers were the same or different from the ones given by other tourists. The Spearman correlation was also carried out. It is a nonparametric statistics that measures the linear association between two quantitative or qualitative variables among the overall averages during the research periods of application, in order to check whether there was a similarity in the ratings of tourists among the periods or not.

The tourist satisfaction involves a number of items that must be analyzed and when put together, they form the indicator that will show the tourist satisfaction level. This indicator was applied in four tourism seasons, according to the method already described. It should be noted that the measurement of this indicator involved 22 items that, when evaluated, they formed the specific scores about the tourist satisfaction (see Fig. 4).
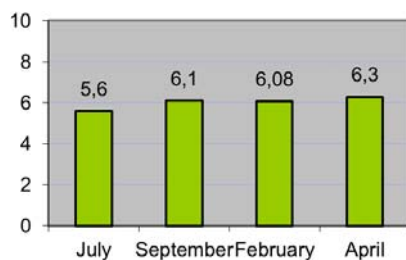

Fig. 4 Trajectory TS indicator

The mean values of evaluations obtained by campers and guest in each study period was placed in the ranking format in accordance with the applied methodology. In all periods, there were no significant differences between the means of deriving evaluations of campers and guests, at 5% significance by U Test. Thus, we can conclude that campers and guests demonstrated similar opinions on the evaluated items.

As for the estimates of the Spearman correlations among the overall averages of the monitored periods, there was a significant positive correlation ($P < 0.05$) among all the periods, indicating no change in people's satisfaction index when evaluated in monitored periods, which shows that the continuity of data collection for evaluation must only be held in one of the periods.

We concluded that the tourist`s satisfaction is sufficient in accordance with the applied methodology; the level of satisfaction as noted in Fig. 4 may vary from 5 to 7. As for the measurement of TS indicator, the methodology used was able to convey information on the evaluated items. Based on collected data, it was possible to understand how is the level of the tourist`s satisfaction about the destination, which facilitates the formulation of actions that really contemplate the needs of these tourists.

B. The Community Satisfaction Indicator

200 questionnaires with closed questions were applied in the local community. In order to plan the questions, a survey was carried out about the main issues of the community satisfaction with tourism. The questions were selected according to some authors [3], [13], [14], [16]. As for the score of the responses we used the Rose Methodology [14] to the closed questions and the methodology of the WTO for responses from 0 to 10 scales [10]. The questionnaire consisted of three parts: the first with eight questions and answers in a scale ranging from 0 to 10; the second part displayed eleven questions with closed answers and answers with the scale of 0 to 10 and the third part presented five closed questions.

The tabulation of questionnaires was executed by the SPSS tool version 10.0, which enabled the score of the questionnaire, that was done as follows: in Part 1, for each question the values of the grades given by each respondent were added and the result was then divided by the number of respondents, thus obtaining the average grade for each question. Then, the mean of the sum of each question grades and the result was divided by eight (total number of questions that make up part 1). The resulting value is the overall average grade of the questionnaires, i.e. the score of Part 1. In the second part, the positive answers (Yes), received 1 point and the negative answers (No), 0 point. The positive answers of each question from the 200 respondents were added. The results were summed, and the total number of positive answers from the 200 people interviewed was demonstrated. The average score of these questions was obtained through the rule of three.

Part 2 was the average sum of the questions obtained and divided by three.

In Part three, we did the same procedure that was performed in Part two, i.e. in the positive answers (Yes) two points were given and to the negative answers (No) zero point.

Final Score: 1000 (maximum score of positive answers from the respondents = 200 X 5 questions) where:

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10 (maximum score), X (equivalent note the positive responses), A (score of positive responses) 1000 --------- 10, A ---------- X

Score of the indicator:

$$CS = \frac{Parte\ 1+ Parte\ 2+ Parte\ 3}{3}$$

The evaluation of the local community was very important because the items that have been evaluated are somehow basic to the development of this assessment and also essential for tourism activities. The city organization concerning the evaluated items must be satisfactory so that the tourism can be developed. Otherwise, tourism would not sustainable either though a social point of view or an equitable one. The measured indicator obtained a final score of 5.43, proving to be satisfactory according to the WTO scale.

It was concluded that the measured indicator proved to be an effective analysis tool, allowing the researchers to capture the views of the local community, but it is important to point out that the result of the analysis of this indicator was also satisfactory, due to some planned strategies on the proper data collection. The researchers involved in the data collection were trained and transmitted to all the necessary information to the respondents; so, they were able to understand what was being asked and therefore, could answer according to their points of view.

C. The Tourism Contribution to Local Economy Indicator

There was a survey about the minimum and the maximum values (money) that tourists spend daily in the tourism of the Lagoa da Confusão (food and lodging), as suggested by the WTO and the raised values were:

Minimum: 35.00 Reais – 10 Euros (restaurant + hosting the camping), Maximum: 80.00 Reais – 23 Euros (restaurant + accommodation in hotel or guesthouse).

It has been set for this research the following scale: The answer from 0 to 35.00 Reais = 0 points, Values between 35.00 to 80.00 Reais = 0.5 point, Above 80.00 Reais = 1 point.

So, in each alternative, the number of respondents were added and then, the result multiplied by the score that the alternative had:

TABLE II
TCLE ANALYSIS

Between 0 to 35.00 Reais = number of the respondents x 0 = zero point	Minimum spending
Between 35.00 to 80.00 Reais = number of the respondents x 0.5 = Z points	Medium spending
Above 80.00 = number of the respondents x 1,0 = W points	Great expense

The total scores were added for each alternative: Z + W = A (total score).

According to the results, the contribution of the tourism to the local economy was positive in all periods; the indicators 5.25, 5.92, 5.75 and 6.0 outlined in Fig. 5, demonstrated itself as satisfactory. However, it can be improved through incentives to the local establishments that provide tourist services such as bars, restaurants, cafeterias, hotels and others.

To do so, the businesses just have to offer varied services and more affordable prices in an attempt to encourage the tourist to bring from their hometowns the minimum possible, encouraging him to spend money in the city. That way, there will be a greater money flow on site. This result indicates that the visitor tourist in the city has contributed to the local economy, but that is not a significant collaboration. The local tourism depends on the seasons and a very small flow has been demonstrated.
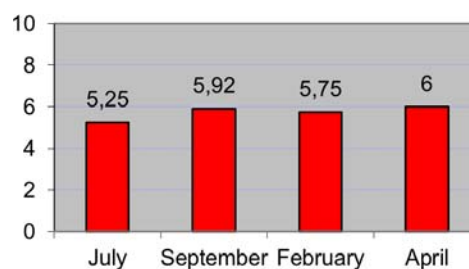

Fig. 5 Trajectory indicator TCLE

The calculation used to measure the score of the item that represents the tourist spending of R$0 to R$ 35.00 (spending considered minimum) should be revised because the methodology considered it as zero score, i.e. the tourist`s spending to the city is irrelevant, which suggests that the tourist is of no importance to the municipality and the spending is not counted in the budget lately. This type of policy can turn the city into an elite tourism site, if increasing the value of the indicator is considered. In fact, the score for this item cannot be zero, but another score which will be of significance in the final value of the indicator. Therefore, it can be noticed that the methodology considers the expenses to be Poor, Good and Excellent, leaving out the Regular concept. It is possible to break down the item, setting more response options, such as: What is your daily spending in the city? 1) From R$ 0 to R$ 10.00 2) From R$ 10.00 to 15.00, 3) From R$ 15.00 to R$ 35.00, 4) From R$ 35.00 to R$ 80,00, 5) above R$ 80.00. These options make it easier the evaluation of the tourist`s profile based on his/her daily spending in the city. Tourists who chose first option will be considered with zero score in the indicator measurement, because he is not even buyng the basic items in the town.

The second option will need a share in the indicator calculation, because it suggests that tourists have spent on food in the city, although there is the assumption that he is not paying for accommodation.

The third option suggests two possibilities: the tourist is in the same situation described above or is hosted on private campgrounds, as it is not possible to stay in hotels, lodges and clubs with that amount of money. The average daily room rate of these businesses is at least R$ 25.00 and ranges to R$ 200.00.

The amounts spent daily there are over R$ 35.00 suggest that tourists can be found in the various situations mentioned above and therefore, their contribution to the local economy and to the calculation of the indicator must be higher.

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That might have been the reason why the TCLE indicator has not had a higher score; it may due to not having considered all those peculiarities.

D. The Solid Waste Management Indicator

The indicator did not consider the amount of solid waste generated, the kind, and the place of origin of it. The indicator evaluated where it is dumped and its treatment, based on the analysis contained in the "Master Plan for Urban Development in Supporting the Environmental Management: Lagoa da Confusão 2005". The score was considered through the following question: Is there proper treatment of solid waste that is generated in the city?

A negative response reflects in a zero score and in case of a positive answer, one should score the treatment on a scale of 1 to 10, based on specific methodologies.

The analysis of the solid waste management in the municipality forced this indicator to receive a negative score, according to the methodology used, i.e. zero point. It was analized in this item only the assessment of waste disposal, or better, the treatment site and how the waste is treated. We did not analyze the quantity of generated waste, the types of waste, and where they are generated [18].

The measurement methodology of this indicator proved to be effective in the case of the city of Lagoa da Confusão, because it had data on solid waste management, which allowed the analysis, guided by the question: Is there adequate treatment for waste at the Tourism destination? As the answer was negative the indicator received a score of zero, but if it was a positive response, a methodology to assess how the treatment is performed should be planned.

The research determined that the city administration provides the daily collection of waste, but do not do it selectively and deposits it in so-called "dumps", which have existed for three years. The treatment given to the waste is not suitable reportedly [18]; the waste is not separated and recycled, it is only burned.

The appropriate procedures for the collection and treatment of the waste may prevent the proliferation of environmental complications. [8]

The city waste dump is close to the lagoon which can lead to serious environmental problems to this natural resource. Through the leaching process, which mixes the slurry with rainwater may cause water pollution of the rivers and lakes that are close to landfills [2].

We should observe that the lagoon is the main tourist attraction of the city; therefore, it is an important source of income for the local community. Consequently, some emergency actions to adapt the waste treatment need to be taken so that the problem does not compromise this feature.

We also emphasize that tourism is an activity that generates a lot of garbage. An example of that problem is the city of Bombinhas (Santa Catarina State, Brazil), a tourist destination whose main attraction is a resort. Through a survey, it was found that the quantity of waste increases at the rate of 350% in tourist season times. Therefore, all the waste generated by the activity must receive an appropriate treatment so that it will not increase the environmental problems of the destinations, thus ensuring the quality of urban life.

E. The Planning Process Indicator

A questionnaire was applied to tourism managers of the city of Lagoa da Confusão. The questionnaire consisted of 10 key issues, which were selected considering the main requirements so one may have control over the tourism activity. The questions were selected according to the vision of authors [3], [13], [14], [16]. The answers could have 1 or 0 scores; the maximum score was 10 points and the indicator value corresponds to the sum of grades of the answers. The result is in Table III.

TABLE III
PP RESULTS

Respondent: Management of the Tourism in Lagoa da Confusão		
Interview Date: 25/02/2006		
Questions	YES	NO
1. Is tourism planning done in the municipality? (if the answer is yes, how is it done?)	-	0 point
2. Is there a monitoring of water quality of the lake at least once a year?	-	0 point
3. Does the municipality receive any support (government agencies) for the development of the local tourism?	1 point	-
4. Is there the monitoring of tourism (tourist flows, transportation, tourists check-in in the hotels)? How?	-	0 point
5. Does the city administration develop environmental education for tourists?	1 point	-
6. Does the city administration offer tourism training courses and environmental education for the community? How?	1 point	-
7. Does the city administration perform surveys of tourist satisfaction? How?	1 point	-
8. Are surveys of tourism satisfaction carried out in the community? How?	-	0 point
9. Does the administration invest in improving the quality of the tourism services?	1 point	
10. Is the local culture valued in the tourism seasons? How?	-	0 point
Final points	5 points	
Grade Indicator	5	

It is observed that the score for this indicator, with grade 5.0, proves to be satisfactory, according to the UNWTO scale, but it is important to state that the planning process has to be present in a tourist destination, with its fundamental development so success can be achieved in the destination. Therefore, the indicator should seek grades as close as possible of an excellent concept which does not happen with Lagoa da Confusão destination that shows an indicator that is very close of a poor concept.

The failure to carry out many actions aimed at the local tourism contributed to an uncertain level of the planning process. It may be in a favorable or unfavorable position in the future. In the case of the studied target, the indicator was able to diagnose how the actions for the Tourism Planning of the city are, but this was only possible because beforehand there was a survey of the key points that should be considered as essential for the proper development of tourism in Lagoa da Confusão.

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F. The Attraction Protection Indicator

A questionnaire proposed by [14] was applied for tourist attraction analysis, with minor adaptations to the study, so that some questions suggested by the WTO were inserted. The questionnaire was completed by the researcher of the study, as it was a technical opinion or better, an opinion of a tourism specialist concerning an attraction

The questions that compound the questionnaire were selected so that they represented 10 key issues. The answers could have scores 1 or 0; the value of the AP corresponded to the sum of the points.

The lagoon attraction was rated as the main attraction of the city. This attraction, according to the IUCN criteria cited by the WTO, is in Category 6 - Sustainable use of natural ecosystems (area of protected and managed natural resources). The measurement indicator of the AP considered this category, so we selected some requirements concerning the attraction protection that fall into this category. Many of these requirements appeared to be insufficient and others were nonexistent.

TABLE IV
RESULTS AP

Period: July, September / 2005 and February, April / 2006		
Respondent: Technical - turismóloga		
Questions	Yes	No
1. Does the attraction have any kind of environmental protection (about the fauna, flora, and conservation of pond water quality)? What?	-	0 point
2. Is there any environmental impact study in relation to the attraction, which is being considered in tourist activities? (If yes, which one?)	-	0 point
3. Is there any study about the attraction occupancy being executed? (If yes, what?)	-	0 point
4. Is there a central reception/touristic information center next to the attraction?	-	0 point
5. Is there any information material regarding the attraction (Information that include the regulations for the use of the attraction)?	-	0 point
6. Is there a specific attraction administration?	1 point	-
7. Does the attraction have delineation areas? (For swimming, camping area, green areas, area for bars, restaurants and cafeterias)	1 point	-
8. Is there a controlled flow of tourists in the attraction? (If yes, which one?)	-	0 point
9. Does the attraction have adequate security? (Sign posts about the characteristics of its ecosystem, procedures to prevent erosion, deforestation, removal of riparian vegetation, exploratory fishing, use of lake water for domestic purposes, there is the presence of on-site sewage release)	-	0 point
10. Is the exploitation of the attraction appropriate? (in relation to the amount of people and activities)	-	0 point
Total Score		2.0

The attraction protection indicator considered key points on the attraction (management and preservation). It proved to be clear and easy to be applied and analyzed when combined with a qualitative analysis that enables one to know about the attraction level of protection, based on some basic requirements, as shown in Rose [14].

G. The Social and Cultural Impact Indicator

The methodology used was the one proposed by the WTO, which suggests the calculation of the number of tourists per capita, using the following formula:

(SI) = Number of tourists (given time: peak season), Size of local population, Analysis of Results: $0 < x < 1 = 1$ point $= 100$ %, $X = 1 = 0.5 = 50$ % point, $X > 0 = 1$ point $= 0$%.

The calculation of the number of tourists who participated in this research was conducted through a survey in hotels, lodges, and camping on the number of tourists per day during this period. The study showed the day with the largest number of tourists so, that was the chosen period to carry out the research.

The tourism seasons in Lagoa da Confusão City obtained a positive grade in this indicator in all periods, which suggests, according to the evaluation criteria of the WTO, that there were no negative impacts on tourism, because theoretically, if the lower the flow, the lower the impact. So, this indicator proved to be an ineffective indicator because it only evaluates on quantitative data how many tourists there are per community person, considering that the higher the number, the greater the negative impact. It is necessary to evaluate this indicator together with other indicators such as a Pressure one (not considered in the research), because this indicator considers the tourist profile along with the tourist flow, which allows a qualitative analysis and enables the understanding of some socio-cultural impacts. Another indicator to be thought of is the Use Intensity (also not considered in the research), because it is important to analyze accurately about the number of tourists in certain areas of the destination as that also collaborates in understanding these impacts.

It is essential to have a commitment to clarity when speaking of socio-cultural impacts to try to measure them considering the factors that those impacts involve.. They are also largely invisible and intangible. They are usually permanent, with little or no opportunity to reverse the changes once they have occurred. The key to the social and cultural impacts of tourism seems to be the relationship between local communities and tourists [17].

When we refer to the indicator, it is clearly observed that only the quantification proposed by OMT does not reflect the reality of the impacts in question. Therefore, it is necessary to search for other variables that may add value to the indicator, that allow the "data crossing" of these variables with the value obtained in the measurement proposed by the WTO. That would result in a more accurate analysis about what that value can bring as consequences for the local community. It can be cited as an example the research that was carried out in the period of September / 2005, and received a score of 10 points and would be considered as a good result, according to the WTO criteria. However, when we observe other factors such as the satisfaction of the local community with the loud noise coming from the tourists' cars, it is not so satisfactory. The population was outraged and many people were isolating themselves in their homes. This is a negative impact on their

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quality of life. We conclude that the assessment of the indicator allows a superficial analysis as it does not mention the particularities that may be occurring; a grade 10 does not always mean the absence of negative impacts.

The variables to be considered in the forecast of socio-cultural impacts are: theft of artifacts by tourists (already occurred); introduction of new words in the vocabulary of the community people; replacement of the traditional artcrafts by other products that tourists require; new eating habits; growth of crime; mischaracterization of traditional architecture through constructions such as buildings, clubs, hotels and others; increasing influence of foreign media; loss of the community dignity because they are forced to behave in a servile way to the tourists [17]. The indicator must consider these variables. The measurement proposed by the WTO is valid once the socio cultural impacts that have emerged and the profile of tourists are considered together with the WTO propositions. Another issue is that this indicator (in the case of the Confusion Lagoon district), took into account only the tourists who were staying in hotels, lodges and campsites. People who go to the city and stay less than 24 hours in the site are considered by the WTO as excursionists, because the municipality does not have an entry and exit control of tourists were not considered. It makes it difficult to predict the number of tourists entering the city and not enjoy the means of accommodation. Another point to be considered is that the city that is the object of study does not take into account the tourist visiting the city for just one day. The WTO considers this type of tourist as hikers. Many of these visitors are from the nearby town. They spend the day at the site and then return to their homes. Therefore, we need to consider in the calculation of this indicator this flow in order to have a real description of the tourist flow in the place and their socio-cultural and environmental impacts.

V. INTEGRATED ANALYSIS OF THE MONITORED INDICATORS

Table V was planned to be used as a joint analysis of each indicator. The TCLE and SI indicators were not considered because they did not demonstrated reliable data.

TABLE V
GENERAL TABLE OF THE INDICATORS

Indicator	Jul 2005	Sep 2005	Feb 2006	Apr 2006	Final Media
TS	5,67	6,07	6,08	6,31	6,03
CS	5,42	5,42	5,42	5,42	5,42
WM	0	0	0	0	0
PP	5,0	5,0	5,0	5,0	5,0
AP	2,0	2,0	2,0	2,0	2,0

The results presented in Fig. 6 represent the general data on tourism in the destination that have been raised in the periods July/2005 to April/2006.

When analyzing Fig. 6, it is observed that there is no "conformity" of the key indicators of sustainable tourism, that is, they show up at different scales. It is possible to search for the conformity of the indicators in the desired range (10) by observing the related data.
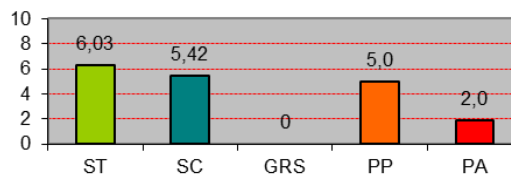

Fig. 6 Analysis of Lagoa da Confusão Tourism Indicators

We can say that the PP indicator (Planning Process), influences the other key indicators of sustainable tourism, in the case of Lagoa da Confusão. When this indicator gets high marks, other indicators will probably achieve positive scores. If that does not happen, it is because there are flaws in some actions of the Planning Process, and they may be interfering on the results of other key points.

This indicator was composed of questions concerning the organization of the tourist destination, the tourist, the local community, and the tourist attraction. The obtained data will probably influence the "Satisfaction of the Local Community" that shows an indicator that reached a final score of 5.42 with a tendency to increase or decrease, according to the measurements that are performed. The evaluation of the Planning Process is uncertain and there is no community involvement in this process. This was confirmed when the questionnaire was applied to the local community, and 90.5% of the interviewed people said that they did not participate in the tourism planning in the municipality. If it is true, there is no appreciation of the local culture. This statement can be observed during tourism seasons, when no form of cultural expression of the community could be noticed

The indicator "Planning Process" demonstrated the lack of dialogue between the local managers who are involved with tourism and the community members. This ends up in a lack of fulfillment of their demands, in the non-clarification of the tourist activity itself and the lack of "organization" of the city considering the services provided to tourists by the community: services pricing, quality, variety, entertainment, and others. There is no guidance or procedures for the community to follow so they organize their tasks the way they find it most appropriate.

The PP indicator was also responsible for the negative assessment of the community concerning the basic urban infrastructure, which had 4.41 score, because if there is no planning of the local tourism, therefore, there is no concern for the basic urban infrastructure, which is one of the priority items within a tourism planning. The community of Lagoa da Confusão proved to be dissatisfied with these items as well as others related to tourism. The CS indicator was not greater because it represented a reflection of the lack of some items that make up the Planning Process. This result also influences the satisfaction of the tourist, because when the community is not organized and involved in this process, it will act individually, which can influence the level of dissatisfaction of tourists with some evaluated items: the acceptance of payments via credit card and checks and the daily room rates of lodging facilities.

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The TS indicator had a final score of 6.03; it shows up as satisfactory on the scale of the WTO, but it should be made clear that although it is a favorable outcome, it should be improved otherwise this indicator may turn out to be negative in the following periods of the tourism season. The tourist`s satisfaction depends on how is the tourist season going to be, and this implies knowing the profile of the tourists and organizing the entertainment, the various services and preparing the local receptivity. The items that were part of the measurement of this indicator are directly linked to the indicator CS, which in turn is a reflection of PP, as observed, because the items evaluated by tourists as services (food, reception and information), local responsiveness, trust, prices and local businesses are related to the host community. So, when the tourist evaluated these items, he/she assessed the local community as well.

The community satisfaction indicator, with a final score of 5.42, does not have a very high score. That means: if the community is not very pleased with the local tourism, it cannot meet the needs of the tourists in an adequate way. The more satisfied is the local community (this depends mainly on the process of planning), the better its relationship with tourism. That will increase their satisfaction and consequently the tourist`s.

The lack of a tourism planning in the municipality of Lagoa da Confusão also highlighted the disorganization of tourist activities in the monitored seasons, which influenced the tourist`s satisfaction level concerning the destiny. The items: entertainment, security, location appearance, signs (tourist and traffic surveillance), tourist routes and basic urban infrastructure are evaluated by tourists and are items that should be included in the tourist planning of the city. As those items are not present, the scores given by the tourists concerning them were not very high, which also contributed to the final average for the TS indicator.

As the PP indicator is low, there is no organization of the people involved in this activity, so there is no standardization of prices of services, such as food and lodging, as noticed in all seasons in the local market. This triggered an over valuation of these services by the local community. The majority of the tourists brought what they needed to be used in the city from their hometowns, because they could have them for a lower price. That procedure acted over the TCLE indicator, which could have been higher if the financial contribution of tourists was also higher, but this was not possible due to the lack of municipal planning on those items (lodging, etc.). The consequence was the dissatisfaction of the local community since they profited much less in the tourism season.

The AP indicator, with a score of 2.0, is also an outcome of the PP indicator score. The Attraction Protection indicator was related to the level of the tourist attraction protection (the lagoon) that proved to be unsatisfactory. The result could not be different; if there is not a local planning, there is no way of protecting the natural attraction because there are no studies or guidelines to promote assistance in this process.

The attraction protection level is low, so that makes it vulnerable to environmental problems. It is exposed to the flow of tourists in seasons. This flow proved to be low during the monitored season, but the increase of it could result in the increase of the solid waste. Consequently, it could lead to serious environmental problems for the city, because there is no proper treatment of the waste as the research has already mentioned. This resulted in a final average of "0" for the WM indicator.

The indicator Sociocultural Impact, which analyzes the relationship between the flows of tourists to the local community, demonstrated to be insignificant because the tourist flow was low. As already discussed, this indicator should be related to other important items involving the social problems that appear with the flow of tourists, to present a more accurate analysis.

The indicator was important to measure the flow of tourists. We concluded that the flow was not higher, as a result of the lack of tourism planning. There was no planned action to attract tourists to the destination, which, in a way, caused the dissatisfaction of the local community. People in the studied city always expect a good flow of tourists and that didn`t happened; there was also a reduction in the financial contribution of the tourism to the city. The low flow of tourists was important to verify the flaws occurring in the city: with a bigger flow, there would be more problems. Since the tourist Planning Process is not favorable, the tourist destination Confusion lagoon would not be able to manage well the touristic activities. Therefore, the tourist destination of Lagoa da Confusão has to start planning some strategies for a better local touristic outcome in order to increase the score of the key indicators of sustainable tourism. It has to involve all the actors of this process and consider all the issues that were sprung up in the study. Monitoring is necessary, so it can be shown whether the planning is working or not. The key points of the tourism sustainability analysis proved to be important monitoring and analysis tools for small tourist destinations, depicting the destination in an entire manner. One cannot tell that tourism activities in a destination are well, if only one of the indicators is applied. It takes several indicators to evaluate the destination.

VI. Conclusions

The research intended to comprehend the sustainable tourism indicators and the complexity that involves them when one thinks of them of as a proposal to "measure" the tourism in the point of view of sustainability. So, it was observed that the more we try to "translate" the reality of tourist destinations through structured models, new problems emerge. That unveils the need for researches that understand and integrate the tourism activity.

The various highlighted aspects involving tourism and sustainability should be studied in order to establish certain conditions to evaluate the local tourism. We sought to apply some key indicators of sustainable tourism, proposed by the WTO in the tourist destination of Lagoa da Confusão, to test them and to generate information about them.

It was noticed that the monitoring tool in the study, based on the application of several indicators of sustainable tourism, provides better ways of analyzing the local tourism situation than the use of only one of the indicators as it does not demonstrate all the collected data, that could result in a superficial analysis of the tourism destination.

The Lagoa da Confusão municipality was presented as an important object of study for the proposed methodology. It offered the conditions for the researchers to analyze the indicators and the complexities that arose during the research. The collected data can facilitate discussions on the sustainability of tourism in the destination. It is necessary to collect some data also about other indicators that were not monitored, in order to have a better understanding of the 11 key indicators of sustainable tourism as proposed by the WTO and to find tools that may provide setups to understand tourism and sustainability.

The topic was intended to prompt information about the sustainable tourism indicators in their various aspects and to make sure they may be subjected to a monitoring model of tourism, as suggested by the WTO. The activity was considered not as a myth that can be the solution of present and future problems, but as an activity in development and like others, engenders complex problems that must be unveiled and investigated. That way, a so-called sustainable tourism can evolve and is going to be developed.

REFERENCES

[1] J. Abbot, I. Guijt, "Novas Visões Sobre Mudança Ambiental: Abordagens Participativas de Monitoramento". Rio de Janeiro: AS-PTA, 1999.
[2] F.R.A. Bidone, I. Done, J. Povinelli. "Conceitos Básicos de Resíduos Sólidos". São Carlos: EESC/URP,1999.
[3] B. Boiteux, M. Wener, "Promoçço, Entretenimento e Planejamento Turístico". Serie Turismo. São Paulo; SP: Aleph. 2002.
[4] T.M. Braga "Índices de Sustentabilidade Municipal: O Desafio de Mensurar". Belo Horizonte:UFMG/ Cedeplar. 2003.
[5] C.M. Deponti "Estratégia Para Construção de Indicadores Para Avaliação da Sustentabilidade e Monitoramento de Sistemas". Porto Alegre: Revista Agroecologia e Desenvolvimento Rural Sustentável, v.3, n°.4, p.44-53, out/dez.2002.
[6] V.I. Grover, "Índices Ambientais: Uma Visão Geral". Revista ISWA TIMES, ed.3, p.4-9, 2001.
[7] Instituto Brasileiro de Geografia e Estatítica do Brasil. – IBGE. "Apresenta Informações Estatísticas Sobre o Município de Lagoa da Confusão". Disponível em: <www.ibge.gov.br>. Acesso em: 06 jul.2015.
[8] F.S. Kran "Qualidade de Vida na Cidade de Palmas-TO: Uma Analise Através de Alguns Indicadores Habitacionais e Ambientais Urbanos". 2005.138f. Dissertação (mestrado em Ciências do Ambiente). Universidade Federal do Tocantins, Palmas.
[9] Organización Mundial Del Turismo – OMT, "*Lo Que Todo Gestor Turístico Debe Saber. Guía Práctica Para el Desarrollo y Uso de Indicadores de Turismo Sostenible*". Madrid, España: Impreso por la Organización Mundial del Turismo, 1997.
[10] Organización Mundial Del Turismo - OMT. "*Indicadores de Desarrollo Sostenible Para Los Destinos Turísticos, Guía Práctica*". Madrid, España: Impreso por la Organización Mundial del Turismo, 2005.
[11] T.M. Parris; R.W. Kates "*Caracterizing and Measuring Sustainable Development*". Annu: Reviews in advance, p.13.1-13.28, 2003.
[12] D.G. Pearce (Tradução de Saulo Krieger), "Geografia do Turismo: Fluxos e Regiões no Mercado de Viagens". São Paulo: Aleph, 2003. (Coleção Turismo).
[13] M. Petrocchi "Turismo: Planejamento e Gestão". São Paulo: Futura, 1998.
[14] A.T. Rose, "Turismo Planejamento e Marketing". Barueri: Manole, 2002.
[15] A.M. Rodrigues "O Mito da Sustentabilidade da Atividade Turística". in A. J. Banducci, E.C. Moretti. "Qual o Paraíso?": turismo e ambiente em Bonito e no Pantanal (orgs), São Paulo: Chronos, Campo Grande: UFMS, 2001. p.19-35.
[16] D. Ruschmann, "Turismo e Planejamento Sustentável: A Proteção do Meio Ambiente". 8 ed. Campinas: Papirus, 1997. (Coleção Turismo).
[17] J. Swarbrooke (Tradução de Margarete Dias Pulido), "Turismo Sustentável, Conceitos e Impacto Ambiental". v.1. São Paulo: Aleph, 2000. (Série Turismo).
[18] Tocantins, (State). Secretaria do Planejamento e Meio Ambiente – Seplan, "Plano Diretor de Desenvolvimento Urbano Em Apoio à Gestão Ambiental: Lagoa da Confusão". Palmas, 2003.

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