

## Sustainable tourism and local productive arrangement: Measuring environmental sustainability on the Discovery Coast



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### ABSTRACT

The general objective of this research is to analyze the environmental sustainability of tourism in Bahia, from the perspective of local development. Based on the intense debates about the relationship between development and the environment, this research proposes an interdisciplinary approach based on the environmental problem, specifically regarding the externalities derived from the economic activity exerted by man on the natural

environment, especially the tourist activity. This study focuses on the discussion of productive agglomerations as a factor in the development of a locality. In methodological terms, descriptive and methodological research is used, based on bibliographic analysis and field research, with a view to identifying, applying, and evaluating these instruments in the locality of Porto Seguro, Bahia. To this end, the research favors two methodological cuts: a quantitative cut, called Locational Quotient, and an analytical cut, used for the characterization of productive agglomerations in low and medium development regions, called Local Productive Arrangement (LPA). In view of the analyses carried out, it was concluded that the studied locality can be identified as a tourism LPA in the consolidation phase. In the environmental dimension, there was a need to implement public and private actions that direct and enhance measures that increase tourism activity in a sustainable way. It is expected as a result of this work: (i) to improve the understanding of the theoretical and practical aspects of sustainable development; (ii) contribute to the analysis of regional development policies, particularly in the locality studied; and, (iii) subsidize the development of public policies aimed at the sustainable development of tourism.

**Keywords:** Tourism, Sustainability Indicators, Environment, Society.

## 1 INTRODUCTION<sup>1</sup>

The general objective of this research is to analyze the environmental sustainability of tourism in Bahia, from the perspective of local development. The present work is based on an interdisciplinary approach to the environmental problem, considering the discussions between development and the environment. In this context, the theme seeks to understand the systemic and dialectical relations of environmental processes, in particular, the impacts resulting from the economic activity exercised by

<sup>1</sup> This article stems from the research leading to the first author's PhD thesis in Development and Environment (PRODEMA/UESC).



man on the natural environment inserted in the context of tourist activity on the Discovery Coast, located in the extreme south of Bahia, specifically, in the locality of Porto Seguro.

Tourism has experienced, in recent decades, a continuous and relevant diversification. Becoming one of the most dynamic and fast-growing sectors worldwide, representing: 10% of the global gross domestic product (GDP); 235 million jobs worldwide; 01 out of every 11 direct jobs is offered by the operational sector of tourism; US\$1.5 trillion generated by tourists; 7% of world exports; and 1.8 billion international tourists expected by mid-2030 (WTO, 2016).

Due to its potential for growth and development and because it is a political, social, economic and cultural phenomenon in contemporary times, *The United Nations (UN) General Assembly*, on December 22, 2015, adopted Resolution 70/193, establishing 2017 as the International Year of Sustainable Tourism for Development.

The Resolution reaffirms the role of sustainable tourism in developing countries, "as a positive instrument for the eradication of poverty, the protection of the environment, the improvement of the quality of life and the economic empowerment of women and youth", as well as its contribution to the three dimensions of sustainable development: economic, social and environmental (UN, 2016, p. 3). In this sense, sustainable tourism is defined "as that which meets the needs of today's tourists and the receiving regions, while protecting and expanding opportunities for the future" (WTO, 2003, p. 24).

The question that arises from the concept of sustainable development is how to identify which factors and elements strengthen or weaken the tourist activity in a place, from the perspective of sustainability? The answer to this question has been the creation and application of assessment systems or tools that seek to measure sustainability.

For Van Bellen (2002, p. 70), "[...] there is a reasonable degree of consensus regarding the need to develop methodologies that make an assessment of sustainability" and, according to the WTO (2005), indicators can have a fundamental influence on the process of sustainable development of tourism through the information they generate from the interaction between actors; the mobilization they create; and the actions they promote. Therefore, this research focuses on the activities developed by organizations in the tourism sector, substantiating them in the local economy.

Tourism is, by nature, an activity that drives and, at the same time, depends on sustained regional and local development. Discussed and addressed by several sciences, it is currently being understood as a key element for the dynamization of regions with a low level of development in the world and, in particular, in Brazil.

In recent decades, the concept of local development has been pointed out as a development proposal for issues related to the compatibility between environment, communities and sustainability. For Cassiolato, Lastres and Stallivieri (2008, p. 12) "the emphasis on the local led to the development of the most widely used term of local productive arrangements (LPAs)". In Brazil, several studies have



been conducted on a theoretical-methodological basis for the analysis of LPAs, using measures of location and specialization, such as the Locational Quotient (LQ).

This article is structured in five sections. Initially, in addition to this introduction, a theoretical discussion is presented about the main concepts used in this study, highlighting the theoretical framework on Local Productive Arrangement (LPA). In the third section, the methodological procedures are presented. Next, in the fourth section, the results of the research are presented and, finally, the conclusions and suggestions occupy the last section of this article.

### 1.1 MAIN THEORETICAL APPROACHES ON LOCAL PRODUCTIVE ARRANGEMENT (LPA)

Some pioneering studies and works of regional economics allow us to understand how the concentration, location and specialization of regional economic activities result in a certain configuration of an activity and how it transforms and generates changes in its surroundings.

In Brazil, studies on productive agglomerations have been encouraged by public research funding agencies such as the National Bank for Economic and Social Development (BNDES), the Ministry of Science and Technology (MCT) and its agencies: the Financier of Studies and Projects (FINEP) and the National Council for Scientific and Technological Development (CNPq). Also noteworthy is the Research Network on Local Productive and Innovative Systems (REDESIST), of the Institute of Economics of the Federal University of Rio de Janeiro (UFRJ) and the Center for Development and Regional Planning (CEDEPLAR) of the Federal University of Minas Gerais (UFMG), which have been promoting studies on Local Productive Arrangements (LPAs).

According to Crocco et al. (2006, p. 217), productive agglomerations are considered a "valuable way to promote economic development. Hence the importance of developing methodologies that help development policy managers identify the emergence of these agglomerations." It can be seen that the growing interest in productive clusters can be attributed to changes in the competitive environment of companies. Several concepts are found in the specialized literature, such as: industrial districts, *clusters*, local production systems, LPAs, among others, "which contain differences between them, but have as a common link the understanding that agglomerations, in a broad sense, facilitate and contribute to the economic and innovative dynamics of a specific territorial space" (TATSCH et al., 2015, p. 194).

Albagli and Brito (2003, p. 7) define some of the characteristics that typify productive agglomeration. For the authors, "the term agglomeration – productive, scientific, technological and/or innovative – has as its main aspect the territorial proximity of economic, political and social agents". These economic agents take advantage of the advantages arising from geographical proximity, including access to raw materials, equipment, labor and others, and form the so-called agglomeration economies.



According to Parr (2002), it is observed that in the area of urban and regional policy, the concept of agglomeration economies is at the center of development strategies. Therefore, it is essential that the concept is clearly defined and that research on the subject contributes to highlighting this concept consistently. Thus, the concepts and instruments presented in this research intend to provide a theoretical and methodological framework for the understanding of local development, considering the local productive arrangements as inducers of this process.

According to Moreira, Fernandes and Dias Junior (2017, p. 59), "[...] From the concepts found in the literature, it is possible to perceive and identify some characteristics for productive clusters, according to their degree of development [...]". In this sense, with regard to the classification of Productive Arrangements according to the degree of development, the Ministry of Science and Technology (MCT) classifies them according to the following criteria:

- (i) **Arranjo Elementar** - It stands out for the existence, in a given locality or region, of a concentration of production units with some common characteristic, indicating the existence of technical or productive tradition (including artisanal), but with a degree of specificity or originality sufficient only to guarantee its subsistence;
- (ii) **Arrangement in Consolidation Phase** - It stands out for the existence of productive activities with common characteristics in the place or region, for the existence of a significant technological infrastructure, as well as the existence of relationships of productive agents among themselves and with local institutional agents, consolidating the generation of synergies and positive externalities, but still with the presence of conflicts of interest and/or imbalances, denoting a low degree of coordination and strategic vision; and
- (iii) **Consolidated Arranjo** - It has all the characteristics of the previous grouping, but with a high level of cohesion and organization among the agents. The Consolidated Productive Arrangements are represented by geographic concentrations of companies from a particular economic sector, thus creating a specialized and innovative productive infrastructure. Governmental agencies and other institutions, such as universities, technical schools, development agencies and professional associations, which provide specialized training, education, information, research and technical support, are present in the institutional articulations (CALIMAN, 2003).

The survey carried out by the Ministry of Development, Industry and Foreign Trade (MDIC) points to the existence of 958 LPAs in Brazil. Of these, 567 are in the primary sector, which represents 59% of the country's arrangements. In the secondary sector there are 344 LPAs, a little more than 1/3 (36%) and, finally, in the tertiary sector, the survey points to the existence of 47 arrangements, representing only 5% of the total. It can be seen that these numbers point to an important characteristic



of productive agglomerations in Brazil, especially concentrated in the primary sector and in sectors with low technological content (COSTA, 2010).

Considering the capillarity of LPAs in Brazil and the tourism activity developed on the Discovery Coast, with the consequent impact on the environment, it is estimated that the use of new indicators that measure the degree of concentration and the level of environmental sustainability may contribute to the mitigation of these impacts. According to Moreira (2013, p. 122), "The continuity of research in this area is justified, whether in the development of new proposals for indicators or in the evaluation of existing indicators".

The idea of researching and analyzing tourism as a system of *clusters* and /or LPAs is present in several academic studies, Ferreira et al. (2011), Costa, Costa and Miranda Jr (2012), Alberti and Giusti (2012), Arsezen-Otamis and Yuzbasioglu (2013) and Souza and Gil (2014), especially linked to the theme of local and regional development.

Tourism is carried out as an economic activity, differently from other activities because it is produced and consumed in the same place, so that the consumer travels to the region of destination or consumption (BENI, 2002). To this end, a set of goods and services – tangible and intangible – that can meet the needs and expectations of consumers (tourists) are offered. These goods and services are produced in the various production units, which as a rule are transformed along the production chain until final consumption, which is carried out by the tourist.

According to SEBRAE (2008), tourism interacts with 52 other productive activities of the economy, constituting, therefore, a broad and complex network of chaining. As a production chain, tourism was organized into three major blocks. The set of activities directly linked to the tourism business expresses a chain that is anchored by the activity defined by the Brazilian Institute of Geography and Statistics (IBGE) as "Accommodation and food" (CNAE 5510-8/01). This tourism production chain generates several demands for inputs and services, upstream, and promotes different downstream developments. It is formed by a diversity of tourism segments, highlighting: beach and sun tourism, adventure, events and business, cultural and scientific, religious, elderly, among others.

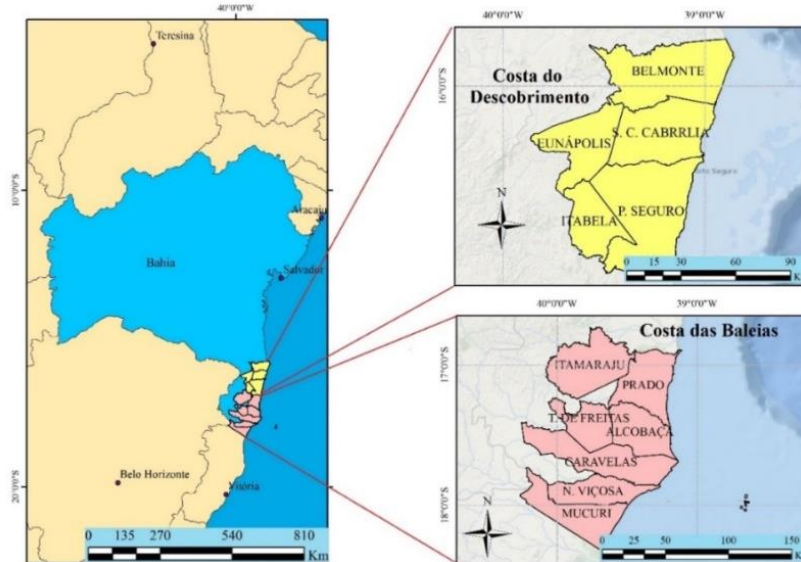
In order to improve the understanding of the theoretical and practical aspects of sustainable development, the methodological procedures that support this research are presented below, highlighting: the delimitation of the study, methods and techniques and the methodology of LPA analysis.

## 2 METHODOLOGICAL PROCEDURES

Regarding the study area, the delimitation refers to the geographic and economic space of the tourist destination of Porto Seguro, located in the extreme south of Bahia, specifically, in the tourist region called the Discovery Coast (Figure 1).



Figure 1 - Location map of the municipality of Porto Seguro, BA



Source: Prepared by the authors

From the theoretical-methodological point of view, according to Vergara (2003, p. 47), the structuring of this research is descriptive and methodological. Descriptive, as it aims to describe the characteristics of Local Productive Arrangements, especially in the aspects of environmental sustainability; and methodological, as it is based on the study of instruments for capturing and manipulating reality. "It is, therefore, associated with paths, forms, manners, procedures to achieve a certain end." As for the means, it is a bibliographic and field research.

The primary data collection of this research was directed to tourism companies, referring only to the means of lodging, in Porto Seguro. The sampling procedure adopted was non-probabilistic sampling, using accessibility as a criterion, also called convenience. According to Dencker (1998), Vergara (2003) and Gil (2010), in non-probabilistic sampling by accessibility, the ease of access should be representative of the universe studied.

A total of 41 interviews were conducted<sup>2</sup> with the managers of companies operating in the accommodation sector that are part of the tourism sector, from May 4 to June 11, 2016. The set of information collected was used to characterize and analyze the Tourism LPA of Porto Seguro, BA.

The questionnaires used were adapted from Redesist to support the analysis of intangible factors, such as cooperation, innovation and interaction, and also had adaptations from the Classification System of the Means of Lodging of the Ministry of Tourism (Mtur), in order to validate the analysis of environmental sustainability. These instruments were tested to the empirical reality, and then applied in the collection of the intended data and information.

<sup>2</sup> This research was submitted to the Research Ethics Committee of the State University of Santa Cruz (CEP/UESC), and approved according to Opinion No. 1,489,933, issued on April 13, 2016.



In Porto Seguro, the interviews made it possible to obtain qualitative and quantitative information about the sources of information for learning, degree of integration, level of cooperation, innovations, among others, and thus characterize the support institutions, the number of companies, the profile of entrepreneurs and the problems faced by the sector in the locality.

With regard to the methodology, the research favors two methodological cuts: (i) a quantitative cut, used for the identification of productive agglomerations, the Locational Quotient, and; (ii) an analytical approach, used for the characterization of productive agglomerations in low and medium development regions, called Local Productive Arrangement (LASTRES; CASSIOLATO, 2003).

Through this methodology, it is possible to capture the conformation of local productive arrangements, and associated with qualitative research, used to analyze intangible factors, it is possible to classify the LPAs according to their complexity and degree of maturity, according to the classification typified by the MCT, already specified above.

A tourism LPA is characterized by the existence of a core activity, specifically anchored in the hospitality sector (hotels, inns, resorts, among others) and also by a series of other integrated activities, responsible for the supply of inputs, products, equipment and support services for the realization or maintenance of the central activity (BRITO, 2002).

The database refers only to the formal labor market, failing to capture information on activities carried out informally, but which are part of the activity analyzed here. Therefore, data from the Annual Report of Social Information (RAIS) for the year 2015 were used, which provides information on the number of companies, employed personnel and salaries paid per activity, in accordance with the National Classification of Economic Activities (CNAE), specifically applied to tourism companies, notably represented by the means of lodging, in this specific case hotels and inns. combined or not with food service (CNAE 5510-8/01). Based on the total number of registered employees (PMS) in the municipalities informed by RAIS, the calculation of the LQ applied to tourism activity was calculated as follows, according to Haddad (1989), Brito (2002), De Sordi and Meireles (2012):

$$QL = (\text{EMP sector } i / \text{EMP municipality } j) / (\text{total country EMP sector } i / \text{total country EMP})$$

Where:

QL= Locational quotient;

EMP sector *i* = employees in the tourism sector in the municipality;

EMP municipality *j* = total number of employees in the municipality;

Total country EMP sector *i* = total employees in the tourism sector in Brazil;

Total country EMP = total employees in Brazil.

The Locational Quotient compares the relative weight of a given activity in a given municipality or locality with the relative weight of that activity at the national level. When the Locational Quotient is greater than the unit ( $QL > 1$ ) it reveals that the municipality or locality



contributes more proportionally than the national average to the activity in question, i.e., the specialization of municipality  $j$  in activities of sector  $i$  is higher than the specialization of Brazil as a whole in the activities of this sector. Otherwise, when the Locational Quotient is equal to the unit ( $QL=1$ ), the specialization of municipality  $j$  in activities of sector  $i$  is identical to the specialization of Brazil as a whole in the activities of this sector and, when the Locational Quotient is less than the unit ( $QL<1$ ), the specialization of municipality  $j$  in activities of sector  $i$  it is lower than the specialization of Brazil as a whole in the activities of this sector (BRITO, 2002).

### 3 RESULTS AND DISCUSSION

In this section, the results of the research on the identification and characterization of productive agglomerations in low and medium development regions are presented. To identify a specialized agglomeration, we used the calculation of the QL, relative to the total formal employment, the number of establishments present in the economic activity and the total value of the remuneration generated, based on data from the 2015 RAIS (BRASIL, 2017).

In this case, the Coefficient of Specialization referring to the means of accommodation in the municipality surveyed in 2015 points to a strong spatial concentration of this activity in the tourism production chain on the Discovery Coast, with  $QL=27.78$ . Another element that stands out, validating the recorded LQ, concerns the behavior of formal jobs observed in the period from 2010 (3,949 jobs) to 2015 (5,396 jobs), in this Tourism LPA. The increase obtained by 36.6% in Porto Seguro in the increase of formal jobs generated by the means of lodging, ratifies the classification in Category A assigned by Mtur in the Brazilian Tourism Map.

The municipality of Porto Seguro is one of the 51 destinations considered to induce the development of tourism in Brazil, representing 1.52% (Category A) of the most demanded tourist destinations in the country, out of a total of 3,345 municipalities categorized by MTur and included in the Brazilian Tourism Map (BRASIL, 2015).

According to IBGE (2017), Porto Seguro is the municipality of Bahia with a territorial unit area of 2,287.085 km<sup>2</sup>, located 707 km from the capital, Salvador. The municipality was founded in 1534 and since 1973 it has been listed by the National Institute of Historical and Artistic Heritage (IPHAN), according to decree No. 72,107 of April 1973. The Discovery Coast was elevated to the status of World Natural Heritage Site in 2000 by the United Nations Educational, Scientific and Cultural Organization (UNESCO), as it brings together cultural, architectural and natural riches forming the Open Museum of the Discovery (MADE) (ARANTES, 2001; PORTO SEGURO, 2015).

In the period from 2000 to 2010, the Municipal Human Development Index (HDI-M) of the municipality increased by 36.57%, from 0.495 in 2000 to 0.676 in 2010. The dimension that contributed the most to this growth was longevity, with 0.801, followed by income, with 0.673, and





education, with 0.572. During this period, the distance between the HDI and the maximum HDI limit, i.e.,  $1 - \text{HDI}$ , was reduced by 35.84% (UNDP, 2013).

The landscape, climatic and geographical characteristics of the Discovery Coast, combined with the exuberance of its beaches, provide considerable tourist movement in Porto Seguro. According to the Secretariat of Tourism (SECTUR) of Porto Seguro (2015), the existing tourist superstructure in Porto Seguro is considered the second largest in the state, with an international airport, road transport, in addition to offering one of the largest hotel parks in Brazil, with 344 means of lodging, including inns, hotels and resorts, justifying, therefore, the increase in tourist activity that has occurred in recent years.

According to the established methodology, a non-probabilistic sample was defined, using the criterion of accessibility, also called convenience. A total of 41 entrepreneurs, directors and managers of the companies that made up the sample were interviewed and asked to answer the questionnaire. The interviews and answers to the questionnaires helped in the characterization and analysis of the Tourism LPA of Porto Seguro, BA.

These interviews provided a detailed view of the relationship with the support institutions, number of companies, problems faced by the tourism sector of the Discovery Coast, especially in Porto Seguro, BA.

In relation to sustainability, these interviews also provide information based on the criteria established in the Classification Matrix of Means of Lodging of Mtur (BRASIL, 2011), highlighting sustainability issues such as the reduction of electricity and water consumption, solid waste management, permanent measures to value the local culture, permanent measures to support socio-cultural activities, generation of work and income for the local community and promote production associated with tourism.

It can be seen that in the Local Productive Arrangement of Tourism of Porto Seguro, the participation of micro and small enterprises predominates. It can be seen that 41.5% of the participants in the survey are from micro-enterprises, followed by 39.0% from small enterprises, making up a significant 80.5% of the companies operating in the sector. It was also found that there were no large companies operating on the Discovery Coast. Another aspect concerns the constitution of the capital of these tourist enterprises, mostly formed with national capital (98%).

In the marketing aspect, the companies of the arrangement pointed out the configuration of the demand exerted in this tourist destination. In this context, there was a low participation of international tourism in 2015 in the occupation of inns and small hotels. Data that corroborate this situation are expressed by: (i) in micro-enterprises, the ratio of domestic and foreign tourists is in the order of 96.1% and 3.9%, respectively; (ii) in small enterprises, these figures are 93.4% and 6.6%; and (iii) in the



medium-sized enterprise of the productive arrangement of Porto Seguro, this ratio rises considerably, reaching 82.2% for domestic tourism and 17.8% for international tourism.

In order to obtain a greater insertion in the international market and, at the same time, expand the market share in domestic tourism, competitiveness assumes a central role in the strategies of consolidation of the arrangement. To this end, with the objective of describing the characteristics of the productive structure of the Porto Seguro Tourism LPA, the research sought to identify which factors are determinant for the maintenance and, if possible, expansion of the productive capacity in the activity carried out by the means of accommodation researched. In the questionnaire applied to the managers of the companies, the competitive factors were classified according to the degree of importance attributed by each company.

For Porter (1998), there is no consensus to define the concept of competitiveness. However, for companies, it means the ability to compete in globalized brands, using defined strategies. Strategies can rely on absolute cost advantage, product differentiation, or economies of scale.

According to the companies visited, there is practically unanimity regarding the high importance of the following determining factors for the competitiveness of the companies installed in Porto Seguro, according to data from the survey, namely: (i) quality of the workforce; (ii) commercialization strategy; (iii) product quality; and (iv) service capacity.

The research sought to identify the importance of the technological level of the equipment and the ability to introduce new services and processes. The results converged in the indications as elements of considerable degree of importance as factors of competitiveness of tourism companies, especially the inns, hotels and resorts that made up the sample. The micro (58.8%), small (56.3%) and medium-sized (87.5%) companies interviewed stated that the technological level of the equipment was of high importance.

The local externalities that are observed in the Porto Seguro LPA, according to the view of the interviewed companies, reinforced the analysis of the conditions of local competitiveness in order to identify the potentialities and weaknesses of the development of tourism activity on the Discovery Coast.

In the evaluation of the main advantages and disadvantages related to the location of companies in the tourism arrangement, two factors stood out as very important for the location of companies in the municipality of Porto Seguro: (i) Proximity to suppliers of inputs and raw materials and (ii) Physical infrastructure (energy, transportation, communications).

In relation to infrastructure (energy, transport and communications), in general, the evaluation made by the companies surveyed considered the infrastructure as good. Items such as energy, transportation and communications obtained, respectively, the following evaluations: (i) Microenterprises 88.2%; (ii) small 50.0%; and (iii) medium-sized company 75.0, classified as of high



importance. The same score was obtained in the evaluation of proximity to suppliers of inputs and raw materials, denoting the existence of a considerable supply of goods and services in this municipality.

The municipality of Porto Seguro, especially its headquarters, is a polarized city. The surrounding cities develop an economic interaction both in terms of the consumption of goods and services, but also in institutional relations. The seat of the municipality houses several public administration bodies.

According to Lemos et al. (2000, p. 13), "[...] Clearly, cooperation needs formal and informal institutions to stimulate and nurture a socio-economic environment in which 'constructive forms' of cooperation and competition can prevail over 'destructive' forms." However, the research revealed that the interaction between companies and representative institutions such as unions, associations, local and regional cooperatives has been of reduced cooperation and also pointed to a certain dispersion. For example, in micro-enterprises, 23.5% and 41.2% considered medium and high importance, respectively, the item that refers to assistance in the definition of common objectives for the productive arrangement. In small companies, there is a slight decline in this observation, with 18.8% of average and 43.8% of high importance. However, in the medium-sized company, the low importance prevailed with 62.5% (Table 1).

Another important factor, in this context, was the evaluation of the promotion of cooperative actions of these institutions, where 64.7% of the micro-enterprises evaluated it as low importance. The percentage indicated by small companies was 56.3%, also for low importance. On the other hand, in the medium-sized company, this perception was better, with 72.5% approval (50.0% average and 12.5% high importance).

"The generic meaning of cooperation is to work in common, involving relationships of mutual trust and coordination, at different levels, among the agents" (LASTRES; CASSIOLATO, 2003, p. 10). In local productive arrangements, different types of cooperation between companies and some actors of the productive arrangement are identified, including productive cooperation and innovative cooperation. Cooperation can take place, involving companies and other institutions, through training programs, events and fairs, courses and seminars, technical feasibility projects and development projects (ALBAGLI; BRITO, 2003).



Table 1 - Evaluation of the contribution of local unions, associations, cooperatives (%)

Type of Contribution	Micro				Small				Average			
	Null	Low	Average	Discharge	Null	Low	Average	Discharge	Null	Low	Average	Loud
1. Assistance in the definition of common objectives for the productive arrangement	5,9	29,4	23,5	41,2	0,0	37,5	18,8	43,8	0,0	62,5	25,0	12,5
2. Stimulation in the perception of visions of the future for strategic action	5,9	64,7	23,5	5,9	0,0	31,3	50,0	18,8	0,0	50,0	37,5	12,5
3. Provision of information on raw materials, equipment, technical assistance, consultancy...	5,9	88,2	5,9	0,0	6,3	68,8	18,8	6,3	0,0	100,0	0,0	0,0
4. Identification of sources and forms of financing	5,9	76,5	17,6	0,0	12,5	37,5	43,8	6,3	12,5	75,0	12,5	0,0
5. Promotion of cooperative actions	5,9	64,7	29,4	0,0	18,8	56,3	18,8	6,3	0,0	37,5	50,0	12,5
6. Submission of common claims	5,9	64,7	17,6	11,8	6,3	31,3	25,0	37,5	0,0	50,0	25,0	25,0
7. Creating forums and discussion environments	5,9	35,3	58,8	0,0	6,3	18,8	62,5	12,5	0,0	37,5	50,0	12,5
8. Promotion of actions aimed at the technological training of companies	5,9	64,7	23,5	5,9	6,3	68,8	25,0	0,0	0,0	50,0	37,5	12,5
9. Stimulating the development of the local education and research system	5,9	76,5	17,6	0,0	6,3	87,5	6,3	0,0	0,0	62,5	25,0	12,5
10. Organization of technical and commercial events	5,9	58,8	23,5	11,8	6,3	12,5	43,8	37,5	0,0	37,5	37,5	25,0

Source: Prepared by the authors based on research data

In this sense, two contributions endorse the perception of the low level of cooperation between the institutions and the companies that make up the arrangement: (i) Promotion of actions aimed at the technological training of companies and, (ii) Stimulation of the development of the local education and research system. The low importance attributed by the companies participating in the research was observed, even to the detriment of the size of the companies surveyed (Table 1).

Vocational training and technical training programs were highlighted, along with improvements in basic education. These programs were practically unanimous among the companies participating in this survey. Consortium to the programs to support technical consulting and the offer of technological services, for the companies of the arrangement, they can form a framework that transforms training and innovation in companies, in a competitive differential of the APL itself.

### 3.1 ENVIRONMENTAL PRACTICES IN THE PORTO SEGURO LPA

Based on the concept of sustainable tourism, which in the sense *of the World Tourism Organization* (WTO), reveals itself as an activity that meets the "needs of tourists and the socioeconomic needs of the receiving regions, while cultural integrity, the integrity of natural environments, and biological diversity are maintained for the future" (BRASIL, 2010, p. 30). In this sense, the research deepened the investigation carried out with the economic actors who work in the



tourism production chain in the region and, thus, Table 2 presents the items that dialogue with environmental preservation in this location.

Table 2 - Importance to the company of measures related to the implementation, monitoring and control of environmental actions (%)

Description	Micro				Small				Average			
	Zero	Low	Average	Loud	Zero	Low	Average	Loud	Zero	Low	Average	Loud
1. Reduced water consumption	41,2	29,4	23,5	5,9	6,3	37,5	18,8	37,5	0,0	37,5	25,0	37,5
2. Reduction of electricity consumption	70,6	17,6	5,9	5,9	50,0	37,5	6,3	6,3	12,5	75,0	0,0	12,5
3. Rainwater harvesting	5,9	64,7	23,5	5,9	12,5	25,0	37,5	25,0	0,0	75,0	0,0	25,0
4. Reducing, reusing and recycling solid waste	5,9	0,0	41,2	52,9	0,0	25,0	6,3	68,8	0,0	25,0	25,0	50,0
5. Reduction of gas and odor emissions	17,6	17,6	23,5	41,2	31,3	37,5	18,8	12,5	25,0	12,5	50,0	12,5
6. Selective collection	0,0	0,0	11,8	88,2	0,0	0,0	0,0	100,0	0,0	25,0	0,0	75,0
7. It does not take measures regarding these items	23,5	23,5	5,9	47,1	37,5	18,8	25,0	18,8	25,0	12,5	25,0	37,5

Source: Prepared by the authors based on research data

The results of the actions undertaken in the surveyed companies point to a significant lack of proactive actions that contribute to environmental sustainability in the arrangement. For example, in the description related to the reduction of water consumption, micro-enterprises indicated with 41.2% as not relevant to their company and 29.4% indicated low importance for this type of measure. In small and medium-sized enterprises, the implementation of these measures has been slightly increased. In small enterprises: 18.8% medium and 37.5% high importance; and in the averages: 25.0% medium and 37.5% high importance.

Another mitigating measure in relation to the environment concerns the use of rainwater. This measure also has little adherence and effectiveness in its practice. It was noticed that the low adherence to these environmental practices is related to the cost of investments in the acquisition and installation of specific equipment for the implementation, monitoring and control of these items.

Table 2 shows that three measures performed satisfactorily in the actions developed by these companies: (i) Reduction, reuse and recycling of solid waste; (ii) reduction of gas and odor emissions; and (iii) selective collection.

In the item referring to reduction, reuse and recycling, the analysis of these measures can be consorted with selective collection. The best performance in these two aspects is attributed to the participation of several non-governmental organizations (NGOs), which work for the protection of the environment, removing this waste and managing its reuse. It is worth noting, regarding selective collection, that the municipality does not carry out this type of collection. It is up to the NGOs to



remove this material. The destination, especially, of organic matter is the community gardens and also directed to the practice of agroecology.

As previously noted in this work, tourism can cause positive impacts, such as: increased production, consumption, employment and income in the private sphere, as well as improving revenue collection and spending in the public sector. However, there is also a series of harms caused by the tourist activity. The most expressive ones reflect the "scars in the landscape" caused by the installation of tourist facilities in natural areas. The flow and volume of visitors can negatively impact ecosystems, especially the most fragile and vulnerable ones located in the Discovery Coast region. In this context, the actions that the companies of the arrangement promote in relation to environmental practices are presented.

Observing the results of the research regarding the training initiatives for its employees, referring to environmental awareness and, in particular, the relationship of the companies in the sector with the surrounding community, it is possible to perceive the absence of proactive actions towards sustainability. These measures could guide actions to mitigate the impacts generated by the equipment itself and also generate the possibility of mediation in conflicts caused by visitors in the receiving community. Especially, when associated with the previous question, which deals with the qualification and training of employees in relation to environmental issues. The employees of the inns, hotels and resorts in the region can be transformed into disseminators of good environmental practices, promoting local culture, among other proactive actions for the well-being of the receiving community and tourists.

Two actions were well evaluated by the companies of the arrangement, specifically, the one related to the awareness of guests in relation to sustainability and the measures aimed at the partnership with the community, which has a strong appeal in the preservation of the environment, appreciation of the local culture and support for the trade of products and services in the region.

Also highlighted in this research are the actions promoted by the hotel enterprises of Porto Seguro regarding the measures adopted to generate work and income for the local community. This result is positive, with a high percentage of importance ranging from 75% to 100% in the companies surveyed that made up the sample.

The aspect related to artisanal, agricultural or industrial promotion, associated with tourism and that has natural or cultural attributes of the region and that are capable of adding value to the tourist product, was evaluated in an insufficient way to promote the valorization of these products, thus failing to provide better economic and social results for the local community.

As already mentioned, the results of the actions undertaken in the companies of the arrangement demonstrate a significant lack of proactive actions that contribute to the sustainability of tourism in the researched location. Microenterprises indicated with 94.1% effectiveness (41.2% medium and 52.9%



high difficulty) the difficulty in implementing these mitigating actions. Likewise, small and medium-sized enterprises also mentioned this difficulty with 87.5% and 100% effectiveness in this indication.

Thus, the concern with the impacts of the relationship between society *and* nature on the environment in the context of tourism has required the search for ways to eliminate or at least mitigate the negative impacts resulting from human actions. This theme, already addressed in the previous sections, refers to the need for control and planning of tourism activities developed in the Local Productive Arrangement of Tourism in Porto Seguro.

#### 4 CONCLUSIONS

The objective of this work was to analyze the environmental sustainability of tourism in Bahia, from the perspective of local development. In the discussion of productive clusters, the methodological procedures for the analysis of LPAs as a factor of local development were observed. In this context, it was verified the existence of a significant productive structure of this activity on the Discovery Coast, located in the south of Bahia. In view of the analyses carried out, it was concluded that the studied locality can be identified as a tourism LPA in the consolidation phase.

It is necessary to emphasize the difficulties of cooperation and interaction in the Porto Seguro Tourism LPA. It was concluded that it is advisable to articulate between the different actors involved with the LPA, for its effective development and sustainability. Only with this articulation and the consequent formation of a consolidated productive arrangement will it be feasible to minimize the negative impacts caused by the tourist activity, as well as to maximize the economic and social benefits.

It was found, through the research, that the impact is greater in the qualitative aspects than quantitative, in the conformation of the local productive arrangement of tourism. It was identified as important to raise the level of competitiveness of firms, stimulate the innovative environment, implement new management processes and, it is expected a greater mobilization of local forces for the development of this LPA.

In the environmental dimension, there was a need to implement public and private actions that direct and enhance measures that increase tourism activity in a sustainable way. The results of the actions undertaken in the surveyed companies point to a significant lack of proactive actions that contribute to environmental sustainability in the arrangement.

It is recommended for future studies the creation, development and application of evaluation systems or tools that can simultaneously measure productive agglomeration (LPA) and environmental sustainability. It is expected as a result of this work: (i) to improve the understanding of the theoretical and practical aspects of sustainable development; (ii) contribute to the analysis of regional development policies, particularly in the locality studied; and, (iii) subsidize the development of public policies aimed at the sustainable development of tourism.



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