TOURIST ACTIVITY INDICATORS IN BANANA PLANTATION AREAS IN THE NORTHERN STATE OF SANTA CATARINA [BRAZIL]

Indicadores de Atividade Turística em Áreas de Bananais no Norte do Estado de Santa Catarina [Brasil]

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ABSTRACT

This article aims to identify the prioritized tourism indicators in the banana plantation regions of northern State of Santa Catarina [Brasil]. Tourism in the banana plantation area benefits from the preservation of the Atlantic Forest. The agroecological production model generates interest and involvement of people in the development of tourism in the region. This study was developed through a qualitative and quantitative approach, survey procedure, and questionnaire via survey. Bivariate correlation tests were developed with environmental preservation as the independent variable. Thus, the use of the matrix was listed in order of priority: the need for greater appreciation regarding the Designation of Origin, promotion of family farming, promotion of gastronomic tourism, development of the hotel sector, and encouragement of local entrepreneurship. A model of tourism indicators related to banana farming and the importance of environmental preservation was proposed. The findings benefit residents and producers, tourism providers, and people involved in the formulation of policies to encourage travel and environmental preservation around banana plantations.

KEYWORDS

Tourism Indicator; Banana Plantation; Sustainability; Agroecological Production; Santa Catarina, Brazil.

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RESUMO

Este artigo tem como objetivo identificar os indicadores turísticos a serem priorizados nas regiões bananeiras do norte do Estado de Santa Catarina [Brasil]. O turismo na área dos bananais se beneficia da preservação da Mata Atlântica. O modelo de produção agroecológica gera interesse e envolvimento das pessoas no desenvolvimento do turismo na região. O estudo foi desenvolvido por meio de abordagem qualitativa e quantitativa, procedimento de survey e questionário via survey. Testes de correlação bivariada foram desenvolvidos tendo como variável independente a preservação ambiental. Assim, o uso da matriz foi listado em ordem de prioridade: necessidade de maior valorização da Denominação de Origem, fomento à agricultura familiar, fomento ao turismo gastronômico, desenvolvimento do setor hoteleiro e incentivo ao empreendedorismo local. Propõe-se um modelo de indicadores turísticos relacionados à bananicultura e à importância da preservação ambiental. As descobertas beneficiam moradores e produtores, operadores de turismo e pessoas envolvidas na formulação de políticas de incentivo a viagens e preservação ambiental em torno de plantações de banana.

PALAVRAS-CHAVE

Indicadores Turísticos; Plantação Bananeira; Sustentabilidade; Produção Agroecológica; Santa Catarina, Brasil.

INTRODUCTION

Cities as a product of the social construction and socioeconomic and socioenvironmental division of space, gain various aspects from the urban-rural divisional context. In other words, cities have urban and rural spaces, with unique characteristics from the production of space and which agents are inserted in this process (Corrêa, 1989). Several cities have historically gained typologies, having their characteristics directed from the aspects given to the activities that promoted the development of that region. When we talk about typologies of cities, we are saying that there are historical, tourist, religious, commercial, and university cities, among others (Reis, 2013). Thus, it is important to seek scientific evidence, especially regional ones that aim to instigate indicators to understand how tourist cities are conceived and how they are inserted from the connection with the tourism sector.

It is important to emphasize that people and the tourism sector are interested in many actions in an unusual way. Among them can be mentioned the visitations in volcanic areas (Erfurt, 2022), the modality 'Jailoo' [meaning pasture] started in Kyrgyzstan and visitors can experience with Indigenous peoples or pastoral areas. Tourists can live like primitive peoples without light and

water, eating local food (Dilshoda, 2022) and lastly astro tourism aims to take people to isolated places to watch stars and eclipses (Усмонов & Эдилов, 2020).

In this perspective, it is necessary to promote discussions and reflections aimed at instigating the logic of diverse types of tourism activities and their connection with the socioenvironmental and socioeconomic contexts that permeate sustainability. Therefore, it becomes necessary to identify among the distinct types of tourism activities whose impact promotes significant relevance to innovative studies and indicators. In this context, banana plantations can be agroecological and show good productivity due to the subtropical climate (Sosinski et al., 2019). In addition, the increasing number of technologies focused on planting, management and varieties of cultivars allow families to have income and work (Negreiros & Salvador, 2021). Thus, there is the possibility of conserving the environment and promoting tourism to develop the local economy (Urruth et al., 2022).

Regarding the plantation and production of banana farming, several countries produce considerable amounts of bananas, Brazil stands out among them, given its continental size which per se, diversifies the types of bananas (Fioravanço, 2003). The bananas from northern of State of Santa Catarina stand out, which are recognized in Brazil for their sweet flavor (Bagega & Werlang, 2017). The region is part of the Route of Princes, has the designation of origin of 'Brazil's sweetest banana' and includes the municipalities of Corupá, São Bento do Sul, Jaraguá do Sul, and Schroeder (Lucion, 2022). Besides selling nationally and exporting the banana, several small industries, and associations benefit from the fruit (Gomes et al., 2016). Banana fiber products are used to produce ecological fabrics, leather and the traditional sweets, cakes, cookies, jellies, liquor, fruit in syrup, candies, pulps, desserts, ice cream, banana-pasta, banana chips, flour, among many others (Landau & Silva, 2018).

Severe weather can harm productivity in the region and compromise the family's income. Thus, instead of working through monocultures the agroecological system was adopted (Silva et al., 2019). For being biodiverse and avoiding the use of pesticides the organic product seal is conquered. The seal, along with the unique characteristics of the product made possible the creation of the Denomination of Origin (DO) [a geographical indication that requires a deep connection with the territory] and the banana productors are organizing themself to conquer a

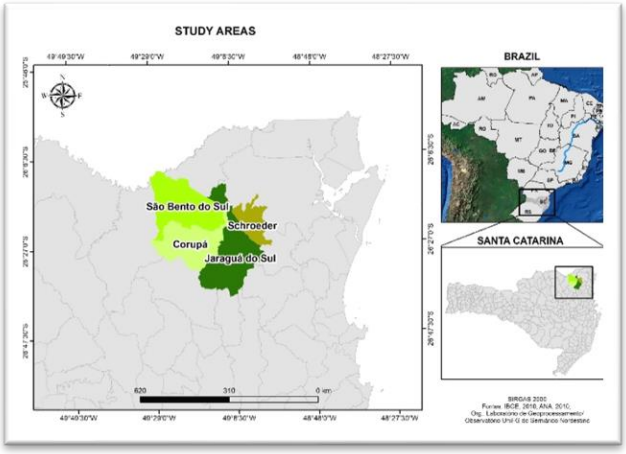
Geographical Indication [GI] for the banana growing areas (Vianna et al., 2021; Embassy of Brazil, 2021).

Among the important aspects of territorial development are tourism activities (Urruth et al., 2022). These can boost new job positions, expand sales, and encourage the consumption of local products (Ramos & Costa, 2017). Thus, this article seeks to solve the following research problem: what are the tourism indicators that benefit from the preservation of the environment in the banana farming regions of northern Santa Catarina, Brazil?

LITERATURE REVIEW

Denomination of Origin [DO] designate products or services with unique qualities due to their place of origin. Obtaining a DO is the first step toward obtaining a Geographical Indication [GI]. This gives a quality differential to specific products and services and creates possibilities to develop and implement public policies aimed at the development of the region that receives it. It is the recognition of a region that has unique products and services (Gatto et al., 2019). There are already studies that highlight the impacts of DO and GI on sectors such as tourism and gastronomy (Lorena et al., 2019). This occurs due to the recognition of ways of preparing food (Vats, 2016) and even the lifestyle of local communities (Jimenez et al., 2019). Thus, what starts as a local product can evolve and become the reason visitors decide to seek tourism experiences in small communities (Oliveira, 2021). This is community-based, creative tourism (Lorena et al., 2019) and immersive tourism experiences (Seal & Piramanayagam, 2018).

Figure 1. Studied area and the presence of Atlantic Forest



Sources: SIRGAS, 2000; IBGE, 2010 (2022).

The northern region of the State of Santa Catarina is known for the DO 'Brazil's Sweetest Banana'. Banana cultivation occurs in hills and has a cool subtropical climate (Sakr & Dallabrida, 2015). In addition, production is family-owned and focuses on environmental, social, and cultural preservation. Thus, tourism in this region seeks ecological alternatives to respect the local environment and the families that live in this territory (Pacheco-Porto et al., 2021).

Cities seeking tourist and culinary attractions from bananas also bring movement to hotels and inns in the region (Oliveira & Diniz, 2018) and, in addition to recognizing the agricultural activities of a territory (Bagega & Werlang, 2017). The tourism appeal of environmental conservation and sustainable use of biodiversity is part of a strategy to increase visitors' attraction with the culture and landscapes (Urruth et al., 2022). This is the case of the annual Banana Festival, held in August. The event includes a contest for the best banana Cuca (a type of sweet bread with banana filling), a traditional product of the region, crafts fair with banana fiber, parades, agricultural machinery used in cultivation, exhibitions, and lectures in schools (Lorena et al., 2019).

The city of Corupá and the partnership between city hall and local companies to install banana-shaped public trash cans since 2010 stand out. In 2019, the city opened the Banana Museum to strengthen cultural activities and involve tourism professionals and the community. Another prominent action was the project to map the banana knowledge and artistic and culinary practices to define which banana products and recipes the community passed down from generation to generation (Siewert & Aveni, 2020).

SANTA CATARINA, REGIONALITIES AND SUSTAINABLE TOURISM

The state of Santa Catarina is in southern Brazil, divided into 299 municipalities and its capital is Florianopolis. The economy is based on agriculture, cattle breeding, fishing, industry, and tourism. The main agricultural products are rice, corn, soybeans, beans, bananas, potatoes, tobacco, sugar cane, and grapes. Livestock is represented by cattle, pigs, beef, and dairy cattle, and fishing is focused on shrimp, especially in the coastal region. The industry is represented by the textile, food, metallurgical, furniture, and shoe industries. Tourism, one of the main economic activities also stands out (Ramos, 2021).

The Tourism Regionalization Program [an initiative of the Brazilian Ministry of Tourism] allowed the sector to be organized by tourist regions in Brazil, thirteen of them in Santa Catarina: Costa Verde e Mar (Green and Sea Coast), Grande Florianópolis (Greater Florianópolis), Caminho dos Príncipes (Prince's Path), Encantos do Sul (Southern Charms), Serra Catarinense (Santa Catarina Mountain Range), Vale dos Imigrantes (Immigrant Valley), Vale Europeu (European Valley), Grande Oeste (Great West), Vale do Contestado (Contestado Valley), Caminho dos Caniôns (Path of the Canyons), Caminho das Águas (Water Paths), Caminhos do Alto Vale (High Valley Path) and Caminhos da Fronteira (Border Path).

Besides generating employment and income, the activity attracts enterprises and capital for territorial development. In terms of regionalities, it is possible to observe that the state has several attractions. In general, each region presents unique characteristics such as geographic, cultural, climate, soil, vegetation, attractions, etc. (Anjos & Andrade, 2021). The Green and Sea Coast region is the most touristy, followed by the Greater Florianopolis [the state capital]. Both are coastal regions with Portuguese and Azorean colonization. Prince's Path, Southern Charms, Santa Catarina Mountain Range, Immigrant Valley, and European Valley are regions of European colonization that explore cultural and gastronomic attractions related to their cultural heritage. The Great West, on the other hand, is a region colonized by second generation of immigrants and incorporates the *gaucho* culture [from the nearby state: Rio Grande do Sul] in its cultural and tourist attractions (Becker et al., 2022).

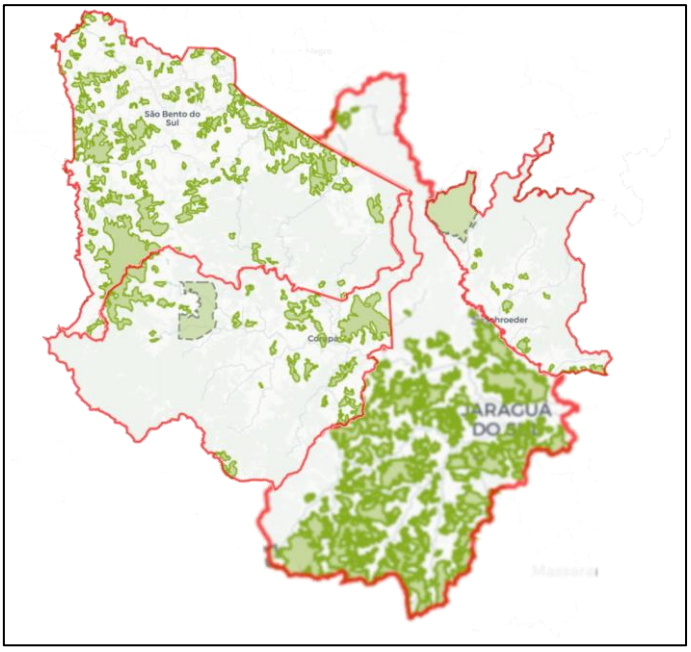
The Contestado Valley concentrates heritage from different ethnicities in its culture, gastronomy and architecture, landscapes; amidst stunning landscapes; are always permeated by the train tracks and the history of the Contestado War. The Path of the Canyons offers options related to the mountains and canyons of the region. Water Paths offers options such as waterfalls and thermal waters. High Valley Path is a region focused on rural tourism and explores European colonization and the well-served culture typical of the interior. Finally, the Border Path region focuses on German, Italian, and Polish heritages mixed with Gaucho, Paraguayan, and Argentine customs. It explores ecotourism and adventure tourism (Sartori, 2021).

The Prince`s Path region is home to the most populous and industrialized city in the state: Joinville. Besides this, it preserves the European culture [with emphasis on the German one] and attracts tourists by offering flowered cities, architecture from the 9th century, community and

immersive tourism, ecotourism, and adventure sports in regions of closed forest. Another focus is gastronomic tourism focused on local products linked to banana production (Anjos & Andrade, 2021). In this way, the region provides visitors with an experience that blends small communities, Germanic cultural influence, and Atlantic Forest preservation areas (Castelan et al., 2018). These are sustainable agroecological systems, these concern the association of native species with crops to generate ecosystem management, in which both are benefited (Urruth et al., 2022). This practice is known as the agroforestry system (Ratnadass et al., 2012).

The banana-growing area benefits from the presence of the Atlantic Forest - According to the website of the SOS Mata Atlântica Foundation and the National Institute for Space Research (INPE), 'Here Have Woods' [or in Portuguese, 'Aqui tem Mata'] (2022), the municipalities involved in the DO 'Sweetest Banana in Brazil' have areas covered by Atlantic Forest [Figure 2].

Figure 2. Study area and presence of the Atlantic Forest



Source: Adapted from the website 'Aqui tem Mata' (2022).

Jaraguá do Sul has 43.78% of its territory covered, Schroeder has 61.13%, São Bento do Sul has 30.88% and Corupá has 49.94%. It is worth mentioning that the municipality of Corupá has the Emilio Fiorentino Battistella Natural Heritage Private Reserve. The area created in 2002 with the support of the Chico Mendes Institute for Biodiversity Conservation has a total area of 11.56 m^2. The preservation of the environment reduces the climatic hazards imposed on agriculture and

allows the maintenance of biodiversity able to assist farmers in improving productivity and consequently, in social, economic, and environmental aspects (Porter-Bolland et al., 2012).

The banana culture in the studied territory benefits from the presence of the Atlantic Forest. Thanks to this, disease and pest rates decrease due to the ecosystem services provided by this biome. Banana farming also presents benefits to the nearby biodiversity (Castelan et al., 2018). In chemical terms, both can emit molecules capable of generating adaptive responses to nearby crops. In physical terms, plant biodiversity decreases the efficiency of the spread of fungal spores by the wind. And, in biological terms, forests and crops can be habitats for natural enemies of each other's pathogens (Castro-Alves, 2014).

This dynamic creates a good relationship between the systems and suitable conditions for plant development and the maintenance of biodiversity between plants (Amorim et al., 2020) and soil (Borges et al., 2018). The benefits generated by the proximity between Atlantic Forest species and bananas are the maintenance of the humid climate, protection of the taller trees from high winds, and the production of organic matter in times when native trees lose their leaves. It is also important to note that banana trees produce better in the presence of trees and soil recovery is faster (Barbosa, 2012).

METHODOLOGICAL DEVELOPMENT

The theoretical-methodological construction that subsidized the development of the present study considers the impact of tourist activity in a region, placing it as the focus of the research. Thus, the spatial location considered as the area chosen for the study, in addition to representing the tourist aspect of banana farming, chosen considering convenience sampling, that is, obtaining data quickly and easily by the team of researchers (Martins & Theóphilo, 2018). To operationalize the research it was relevant and essential to promote the procedural division into two stages, considering the following structuring: quali-quantitative approach, survey procedure, and questionnaire technique via survey with snowball sampling. The first stage was applied in September 2021, and the second stage in October 2021. The questionnaires were hosted on Microsoft Forms and shared via the social networks Facebook, Instagram, and WhatsApp. The research was operationalized via social media due to the Covid-19 pandemic, aiming to comply with the social isolation measures imposed by the global health situation.

The first stage was developed through a questionnaire with open questions to understand the essential indicators for the development of tourism in the banana plantations in the northern region of Santa Catarina. The respondents should reside in the region and have direct contact with products and services related to banana farming, i.e., plant or industrialized products from bananas. A total of 28 residents responded to this stage. The open answers were treated through content analysis. Thus, the indicators and the number of mentions that can be seen in Table 1 emerged.

Table 1. Essential indicators for sustainable tourism development in banana plantations

Indicator	Number of mentions
Environment preservation	25
Improvement of the local economy	21
Promotion of local entrepreneurship	19
Gastronomic tourism promotion	14
Incentive to the Denomination of Origin "Brazil's sweetest Banana"	5
Development of the accommodation sector	4
Promotion of family agriculture	2

In the second step, the indicators were organized to be classified using the REI (Result, Execution, and Investment) prioritization matrix. The tool takes into account the expected result, the possibility of execution, and the investment to implement the solutions (Maiê et al., 2021). This step was developed quantitatively by adapting the REI tool to evaluate the indicators collected in the first step, according to Table 2.

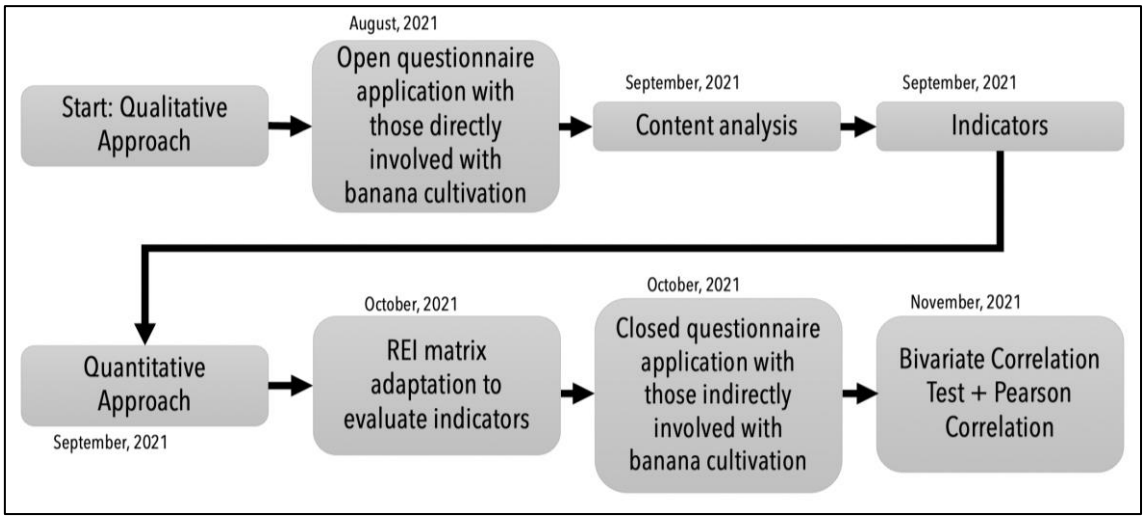
Table 2. Criteria for applying and interpreting the REI Matrix

Score	Result	Execution	Investment
1	Does not eliminate difficulties	Complex, depends a lot on other areas	Very high investment
2	Does not promote a satisfactory outcome of the problem	Complex, depends a bit on other areas	High investment
3	Partially solves the problem	Average, can be solved	Medium investment
4	Few difficulties will remain	Simple with few obstacles	Low investment
5	Eliminates the difficulties	Simple with no obstacles	Very low investment

Source: Adapted from Maiê et al. (2021).

Thus, 62 residents of the northern region of Santa Catarina responded to the second stage. These could not have responded to the previous stage and should, necessarily, have indirect involvement with the banana industry. As indirect involvement, we considered the residents of the city in general who do not produce or industrialize banana-related products. The research design can be seen in Figure 2.

Figure 2. Research design



Source: The authors.

Of the 28 respondents in the first stage, 25 mentioned the variable "Preservation of the environment". For this reason, it was decided to seek the correlation between this and the other variables in the three sessions (R, E, I). Thus, a bivariate Correlation was performed using Pearson's correlation coefficient of all variables to the others. According to Hair Jr. et al. (2009), correlation is considered weak when test results are <0.4, moderate between >0.4 and < 0.6, and strong when >0.6 and <1. Thus, moderate and strong corrections are highlighted in the results.

RESULTS

The first stage of the study highlighted seven important variables to consolidate sustainable tourism in banana-growing regions. They are the Preservation of the Environment, Encouragement of Denomination of Origin, Encouragement of family farming, Promotion of gastronomic tourism, Development of the hotel sector, and Encouragement of local

entrepreneurship. It is worth noting that "Preservation of the environment" was mentioned by 25 of the 28 respondents in the first stage of the survey. In the second stage, after collecting the perceptions of the people indirectly involved from the REI matrix it was possible to establish that there is a positive correlation between the variable preservation of the environment to all the others in its group after the bivariate correlation tests (Table 3). This means that the more effective actions to preserve the environment, the better the results related to tourism in the studied territory.

Table 3. Bivariate correlation between Environmental preservation and other variables – Results

	Environmental Preservation		
	Pearson's Correlation	Sig. (bilateral)	N
Environment Preservation	1		62
Improving the local economy	0.461**	0	60
Promoting local entrepreneurship	0.320*	0.011	62
Gastronomic tourism promotion	0.330**	0.009	62
Incentive to the Denomination of Origin Brazil's sweetest Banana	0.436**	0	62
Development of the accommodation sector	0.459**	0	62
Promotion of family agriculture	0.494**	0	62

However, we highlight the moderate correlation for variables related to the Improvement of the local economy, Development of the hotel sector and Encouragement to family farming, and Incentive to the Denomination of Origin ‘Brazil's Sweetest Banana’, essential elements for the economic development of the tourism sector in the region. Table 4 presents the analysis of the ease or difficulty of implementation of the sustainable tourism indicators. It is possible to observe that there is a positive correlation between the environmental preservation variable with all the other variables. However, it is noteworthy that for the variables promotion of gastronomic tourism, development of the hotel sector and promotion of family farming the significance is higher than 0.05, which does not allow proceeding with the analysis with these variables.

Table 4. Bivariate correlation between Environmental preservation and other variables - Execution

	Environmental Preservation 2		
	Pearson's Correlation	Sig. (bilateral)	N
Environment Preservation	1		62
Improving the local economy	0.364**	0.004	62
Promoting local entrepreneurship	0.446**	0	61
Gastronomic tourism promotion	0.24	0.061	62
Incentive to the Denomination of Origin "Brazil's sweetest Banana"	0.329**	0.009	62
Development of the accommodation sector	0.108	0.406	62
Promotion of family agriculture	0.084	0.522	61

IIt is noteworthy that there is a moderate positive correlation between the Preservation of the environment only in the case of the indicator Encouragement of local entrepreneurship. And, if this is encouraged, again it is possible to infer that they improve the indicators related to the economy with weak correlation [Improving the local economy and encouraging the Denomination of Origin 'Brazil's Sweetest Banana']. Table 5 addresses the issue of investment to make the indicators feasible. It is possible to observe that there is a positive correlation between the environmental preservation variable with all the others.

Table 5. Bivariate correlation between environmental preservation and other variables – Investment.

	Environmental Preservation 3		
	Pearson's Correlation	Sig. (bilateral)	N
Environment Preservation	1		62
Improving the local economy	0.668**	0	62
Promoting local entrepreneurship	0.572**	0	62
Gastronomic tourism promotion	0.500**	0	62
Incentive to the Denomination of Origin "Brazil's sweetest Banana"	0.409**	0.001	62
Development of the accommodation sector	0.337**	0.007	62
Promotion of family agriculture	0.285*	0.025	62

In this sense, it is noteworthy that there is a moderate positive correlation between environmental preservation with an Incentive to the denomination of origin 'Brazil's Sweetest Banana', Promotion of gastronomic tourism and an Incentive to local entrepreneurship, and a

strong positive correlation between the variable Improvement of the local economy. The analysis allows inferring that the preservation of the environment improves the **results** related to the improvement of the local economy, development of the hotel sector, fostering of family farming, and encouraging the Denomination of Origin 'Brazil's Sweetest Banana'. In the same way, the environment preservation variable improves the **execution** of actions that encourage local entrepreneurship. And, finally, the environment preservation indicator allows the **investment** and incentive to the denomination of origin 'Brazil's Sweetest Banana', the promotion of gastronomic tourism, local entrepreneurship, and the improvement of the local economy.

DISCUSSION

It needs to further connect the indicators to the discussions, and determine what is feasible, what is stable, and what is disposable, at least from our point of view. Also, strengthen the connection to the literature. However, the relationship between tourism and banana farming is not always smooth. Snow (2007) did an ethnographic study in a Panamanian village where tourism rapidly replaced banana farming and concluded that there were changes even in the vernacular, with the adoption of a more cultured language. Bagdonis et al. (2009) studied three farms that produced a variety of products, including bananas, on a small scale, and concluded that while there was a lot of potential for the growth of agrotourism and even some interest from farmers, there was at the same time a fear that farmers, by engaging more in tourism, would have less time to devote to agricultural production and their traditional methods, and a lack of support from their association for marketing products during visits.

Environmental preservation results in economic improvement. In the context studied, this is articulated in gastronomy. This connects people with the culture of a place, improves the region's economy, and values production and local entrepreneurship (Mascarenhas & Gândara, 2015). Such indicators connect with the development and appreciation of the hotel sector (Oliveira & Diniz, 2018). And both can foster local entrepreneurship due to the creation of guesthouses, hotels, and the development of new banana-derived products to attract visitors (Sousa-Santos & Silva-Pereira, 2020).

The sustainable and legal use of flora in a territory is a way to reconcile conservation with agriculture and income and employment generation (Sosinski et al., 2019). Thus, family farming and entrepreneurship become allies to environmental preservation. It is also observed that this has the potential to attract visitors, however, the lack of incentive stops generating more significant impacts on sustainable tourism (Pacheco-Porto et al., 2018). There is also the discussion that tourism development generates a high movement of people. And, even if the proposal is sustainable, this usually worries residents due to the increase of garbage and uses of green areas for construction (Nunes & Martins, 2019). For this reason, a preserved environment generates investments to consolidate sustainable production due to its importance for the economy and the facilitation of trade in products related to tourism (Urruth et al., 2022).

Gastronomic tourism and local entrepreneurship benefit from the quality of bananas near the Atlantic Forest regions. Important characteristics include homogeneous ripening of the fruit, firmness of the pulp, green life, and carbohydrate profile. Because of the superior standard, it is possible to guarantee the taste of the fruit in nature and the industrialized products from it (Castelan et al., 2018). In addition to ensuring the unique characteristics of the region's bananas [which is why there is a Denomination of Origin], the efficient use of resources and the benefits related to soil conservation, quality improvement (Silva et al., 2020), maintenance of biodiversity with adequate pest control capable of ensuring sustainable development and reducing climate change can be highlighted (Silva et al., 2022).

CONCLUSIONS

Verify further what are the implications of these indicators for tourism sustainability, and how they are inserted about regionality and in the cities. Banana farming is an important source of income and social and cultural development in the locality studied, especially for farmers, who work at the family level, and for artisans, who develop traditional handicraft products, using various banana fibers, products considered 'sustainable' by the artisans themselves.

The tourism indicators benefited from the preservation of the environment in the banana plantation regions in the north of Santa Catarina are related to better results in the local economy, development of the hotel sector, promotion of family farming, and incentive to the Denomination of Origin ‘Brazil's Sweetest Banana’. It is also related to the implementation of actions that encourage local entrepreneurship. And with the investment in the denomination of

origin ‘Brazil's Sweetest Banana’, promotion of gastronomic tourism and incentive to local entrepreneurship and the improvement of the local economy.

The research proves that the tradition of banana farming ensures its continuity through the maintenance of knowledge, the collective memory of the population, the relationship of belonging that is created between the community and the place, and the safeguarding of customs, maintained over time. Thus, keeping the tradition alive, this set of factors consolidates banana farming in the municipality, which can be strengthened with the recent conquest of the register of ‘Brazil's Sweetest Banana’, through the DO, providing positive changes in the place.

Because of the banana production and the range of by-products that are triggered from the fruit, the DO can corroborate for even greater economic development, having in the associative an important pillar of support for the organization and planning of the activities to be developed by the productive sector. However, these economic issues need to be allied to socio-cultural issues, because it is a fact that just obtaining the DO registration does not mean immediate success.

Continuous work is needed to strengthen the ties of the community with the activity developed, which is done based on memory, identity, and tradition, which represent the key to this process. All this combined with innovation can add value to the banana production activity, allowing the emergence of new productive arrangements in the location, such as tourism. In this process, tourism reveals itself as a potentiality able to strengthen these tools and provide improvements to the quality of life of the population.

Considering the territory's vocation and the presence of groups and associations, the promotion of community tourism can be an alternative by offering more than just contemplative activities to tourists, but also experiences. This way, several segments can be developed concomitantly, such as the rural, creative, and experience segments, among others, bringing tourists and residents together based on daily activities related to the local culture, especially bananas and their by-products, as well as environmental elements. These initiatives can promote new knowledge to tourists and complement the income of farmers.

In terms of contribution, it was possible to observe the producers reaffirming that preservation is essential. This recognition is important in terms of the empirical observation of the growers, so this view can impact the economy, the development of the region, and some tourism

indicators. In the same way, the more ecological banana production, thanks to the preserved Atlantic forest, promotes preservation. It also brings light so that more regions of tourism interest are protected, in this case for landscape interest, rural culture, agroecological attraction, and ecotourism, among other tourism attraction interests so that the activity is sustained, maintained, and perpetuated. In practical terms, this paper presents real issues of residents and inhabitants that in their daily lives prove that the protection of the Atlantic Forest allied to banana production allows the development of tourist activity, as well as proposed indicators for tourist activity in banana plantation areas to analyze environmental preservation in plantation areas.

The study was limited to the definition of indicators in two stages. However, the collection and evaluation of data with a small public of residents of the northern region of Santa Catarina. Thus, the suggestions for future research go towards the validation of data through multivariate analysis and the possibilities of comparison with other territories that present tourism activities in banana plantations. After that, it is possible to evaluate the indicators in other tourist areas of fruit production. Such as the production of grapes, apples, plums, peaches, etc.

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