



# Tourist Trails in Peripheral City Areas

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## Abstract

In this article, we examine the problem of tourist trails located in city peripheries, using a case study of trails in the Cerro Pan de Azúcar, a geographic area in the central-eastern suburbs of Medellín, Colombia. To this end, extant literature was examined regarding issues such as urban development, city peripheries, popular neighbourhoods, tourist trails and the territory. Additionally, with an exploratory methodology and fieldwork based on visual prospecting, participatory work with local communities and surveying topographic profiles, the study area was contextualised and technical data sheets were developed, which provide data on the trails studied. The findings are translated into technical information that contribute to promoting and preserving the environment to the extent that recognising the trails and promoting local inhabitants make these paths a viable alternative for social, environmental and economic development. Conclude that it is necessary to draw attention to the issue of peripheral trail preservation on any municipal administration's agenda, as otherwise, they inevitably tend to disappear.

**Keywords:** urban development, periphery, popular neighbourhoods, tourist trails, territory

## Introduction

The problem tackled in this article is the development of trails located in peripheral areas of the city of Medellín, Colombia, as the uncertainty is subject to the city's growth, because this phenomenon is a dynamic and inevitable fact, implying that the peripheries contained in neighbourhoods grow, in most cases, from the inside out.

According to the United Nations (UN) report 'The State of the World's Cities 2012/2013: Prosperity of Cities', urban peripheries are currently expanding to all the regions of the planet, with different intensities and characteristics. Geneletti, La Rosa, Spyra and Cortinovis (2017) argue that as urban systems continue to grow throughout the world, urban peripheries increase in number and typology, which makes their planning a challenge for sustainable development. It is important to consider different types of peripheries because the historical and sociological processes differ according to human settlements. Therefore, the planning, especially of peripheral areas, can neither follow a single academic or political discourse nor a single paradigmatic approach, much less local administrations that propose unilateral planning actions. A multi-sectoral approach to urban infrastructure is an essential component for its improvement. (UN-Habitat, 2018).

Hypothetically, peri-urban trails may have two different fates: on the one hand, they may disappear, since urban growth is imminent and buildings may be built on the route it occupied for many centuries. On the other hand, constituting the most important point here, they could be enhanced for leisure and recreation and could thus also become tourist attractions contributing to the Medellín city's branding strategies.

Currently, in peri-urban environments, tourism, leisure and recreation activities are foreseeable (Carril & Araújo, 2012); however, hiking can give rise to both positive and



negative impacts. Thus, the following question arises: how should the paths located in peripheral areas of the city be enhanced to generate a positive impact?

This answer can be found in that public administrations invest resources in the peripheral areas of the city (Sagalyn & Ashley, 2014) and contribute to resilience (Mehmood, 2016). Moreover, politicians and urban planners must join forces for social investment to encourage city life through art and culture (Markussen, 2014). However, the learned society also contributes through the transfer of knowledge, cooperating with the research and development outputs that are generated. Based on these ideas, this proposal presents a methodology for the identification of peri-urban trails with tourism potential, developed from community workshops and surveying five trails located in the central-eastern periphery of Medellín and the natural axis through which the trails run is the Cerro Pan de Azúcar.

Thus, being informed about the local inhabitant's opinions, being adequately familiar with the trail routes and having the technical understanding of which public group is targeted, can contribute not only to the pure enjoyment of hikers but also to caring for the environment and generating an effective impact aimed at the economic improvement and social welfare of the host populations.

Methodologically, a literary review and an analysis of the trails located around the Cerro Pan de Azúcar was conducted. Data was collected through participatory workshops and tours with local inhabitants, visual surveys of the territory, stocktaking of tourism products that are present in the neighbourhoods around the hill and the data collection by creating topographic profiles, according to the layout of the different trails.

### **Urban peripheries and tourist trails**

It is necessary to point out that in Latin America, urban peripheries are considered marginal territories, which have traditionally been settled by vulnerable populations due to diverse social problems and which construct poor neighbourhoods through unstable housing. These populations have traditionally been ignored in terms of their contribution to the city and any city's tourism and marketing strategy (García, 2012).

According to Rail & Araújo (2012), attention paid to peri-urban tourism has been scarce, despite its apparent importance. In addition, the aforementioned authors make reference to the work of Le Scouarnec (2005) *Synthèse des travaux du colloque Périurbana*, where they extract the idea that although the typologies of coastal, mountain, rural and urban tourism have received enormous scientific effort, peri-urban tourism has been the subject of few studies, since there is a notable lack of academic work on the subject. However, in recent years, scientific literature has increased interest in tourism in peri-urban areas, with topics such as inter alia, informal urbanism and an interest in slums (Dovey & King 2012), popular districts as urban landscapes for tourism (Crossley, 2012), the subjective and uncertain representation of popular neighbourhoods (Dyson, 2012), social change produced by tourism in peripheral neighbourhoods (Frisch, 2012).

Of the multiple points of view that can be considered with studies of tourism in popular neighbourhoods, the tendency towards proposals that highlight the importance of tourism as an activity that generates social inclusion, job creation and economic improvement in local populations is evident, in addition to the tourism's contribution to reducing poverty and as an activity that can improve the welfare of the poor (Jönsson, 2012; Rolfe & Flint, 2018; Hall, Harrison, Weaver & Wall, 2013; Saarinen, Rogerson & Hall, 2017).



Currently, many urban debates and discussions on tourism planning issues have focused on the approaches addressed in Goal 11 (sustainable cities and communities) of the Sustainable Development Goals (SDGs) promulgated by the United Nations UN (2015). This goal states that it is not possible to achieve sustainable development without radically transforming the way in which urban spaces are constructed and administered.

The issue causes many experts in urban planning to focus on reflecting on the rapid growth of cities all over the world, how cities are expanding, in conjunction with the increase in human migration from rural areas to the city (Morales, 2018; Taylor & Derudder, 2015; De Haas, 2010; Potts, 2009; Jaffe, Klaufus & Colombijn 2012; Schiller & Çağlar, 2009), how urban land is being managed (Bakır, Doğan, Güngör & Bostanci, 2018; Deng, Fu & Sun, 2018; Mwathunga & Donaldson, 2018; Lee, Chun & Song, 2018; Konsti-Laakso & Rantala, 2018) and sustainable tourism planning (Swanson & Edgell, 2013; Mason, 2015).

In the processes of urban growth, peripheries become vital spaces for cities. Faced with this situation, tourism in peripheral areas of the city has been strong, especially in southern hemisphere countries, where the city of Medellín is also part of this phenomenon. Authors such as Steinbrink (2012) and Jönsson (2012) highlight debates around tourism in developing countries and pay special attention to the contribution of tourism on reducing poverty. The phenomenon is assumed to be complex and multidimensional, where the development of tourism can contribute to satisfying the population's basic needs. In this line, Spenceley and Meyer (2012) analyse the theory's evolution and the use of tourism development aimed at reducing poverty in the least developed countries from an economic point of view, for example countries located in Latin America, Africa, Middle East and South East Asia.

In some specific cases, this situation increases the challenges to improve the quality of life for the local inhabitants and that face the urban planners and those who govern the territories in question. Along these lines, it is essential to first approach the concept of peripheries and then focus on a type of periphery: that of marginal neighbourhoods in peripheral areas of the city with potential for tourism.

Bourne (2010) argues that the term 'periphery' refers to the distance of a point with respect to a centre; as a spatial system that has particular properties as a result of its isolation, uncertainty, vulnerability and exploitation, with conditions of marginality and dependence. Hall et al. (2013) argue that the term is often used in a relatively negative context with respect to levels of development and/or influence on central government decision-making. In this sense, the word 'periphery' implies, in addition to its negative connotation, that spatial location is important for the territory, but also for administration purposes.

The notion of periphery and its relationship with tourism are immersed in current discourses and academic debates. In the last decade, many researchers have been tempted to conduct studies in popular neighbourhoods located in peripheral environments of several cities in Southeast Asia, cities in South Africa and also in the favelas of Brazilian cities. Frenzel and Koens (2012) state that slum tourism has evolved from existing in only a limited number of places to a truly global phenomenon that now takes place on five continents, where the range of services and the ways in which tourists visit slums have also increased.

Many cities with peripheral neighbourhoods categorised as poor have experienced visits from tourists. Steinbrink (2012) considers four aspects that can bring us closer to understanding the issue. The first is that tourists have seen the poverty of 'Others' for a



long time and in diverse locations. The second is that tourism in marginal neighbourhoods is properly understood only if it is considered to be a part of modern urban tourism. The third is that the culturalisation of poverty acquires a special meaning in the tourism of popular neighbourhoods, while the fourth is that the history of tourism in popular neighbourhoods shows that this type of tourism has been consolidated in many cities of southern hemisphere countries, for example the favelas in Rio de Janeiro, Dharavi in Bombay and the townships in South Africa. These aspects are found in empirical studies that can bring us closer to understanding tourist motivations.

The first idea mentions that tourists like to see the poverty of others. Dovey and King (2012) suggests that attraction is more in the eager and amazing pleasure of the sublime than any formal beauty, that is, the visit can become a spectacle of an intense sprawling urbanity and can produce an uncomfortable voyeurism. The second idea suggests that tourism in the suburbs is part of the urban tourism. The phenomenon of tourism in popular neighbourhoods has gathered strength for two decades, becoming an alternative to tourism that offers the central or most iconic places in a city. In her article '*The Favela and its Touristic Transits, Geoforum*,' Freire-Medeiros (2009) states that tourism in popular neighbourhoods is already an important element and becomes an alternative in the range of offers proposed by the urban tourism industry.

The third aspect proposes that the culturalisation of poverty acquires special meaning in the tourism of popular neighbourhoods and, indeed, García (2012) states that popular neighbourhoods, which have traditionally been conceived as poor neighbourhoods, are main areas in Colombia and Latin America, which exhibit particular urban, social and cultural dynamics and, at the same time the informal or popular is recognised as a strategy that people use to face their daily economic realities, this being a distinctive feature of a population's cultural characteristics.

The fourth idea states that tourism in popular neighbourhoods has been consolidated in southern hemisphere countries. Studies such as those of Freire-Medeiros (2009); Frenzel and Koens (2012); Frisch (2012); Rogerson (2015); Giblin (2018), among others, show evidence that tourist activity in popular neighbourhoods is not a sporadic event and, on the contrary, it is a tangible and recurrent fact that, with its successes or failures, has created new social and economic dynamics in the peripheral territories where it is generated.

### **Context of the case study**

The Cerro Pan de Azúcar, located in the central-eastern district of Medellín, capital of the department of Antioquia, Colombia (Figure 1), is a hill that reaches a height of 2,138 metres above sea level. The coordinates of its peak are 6°14'55.6"N 75°32'01.8"W.

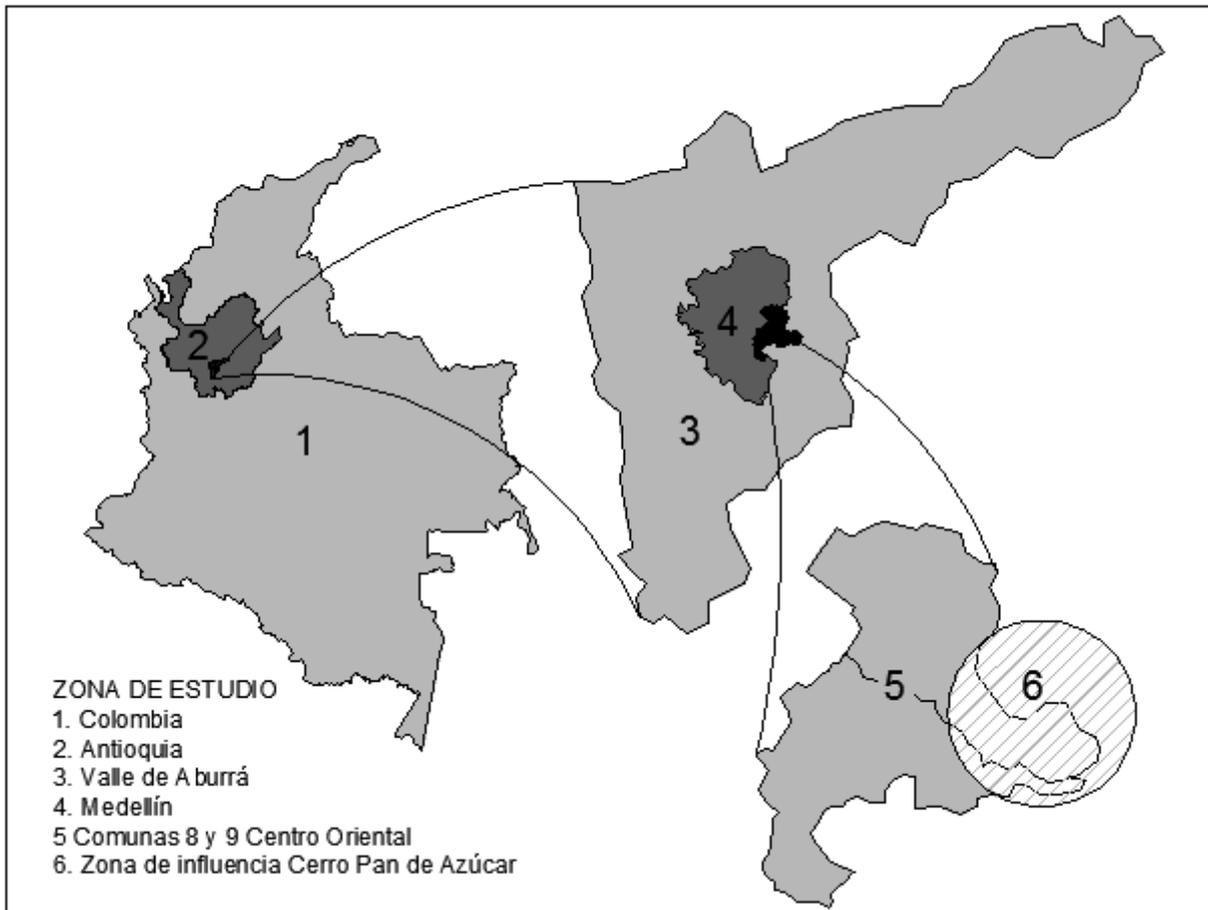


Figure 1. Map of the area of study. Source: created by the authors, not to scale, based on cartographic templates from the Agustín Codazzi geographic institute and the metropolitan area of the Aburrá Valley.

Medellín city has a series of trails located in the peripheries of the eighth district, Villa Hermosa, and the ninth district, Buenos Aires, which make up the Medellín Central-Eastern macro-district. Here we can find, the Pan de Azúcar hill, which is a geographical axis and facilitator of the eastern periphery of the city. In this area, the most recent local administrations have made social investments in order to strengthen tourism. In parallel, recreational infrastructures, educational spaces and, above all, transportation, have been built, including streetcars and overhead cables, locally known as metro cables. This type of infrastructure has given the city worldwide recognition as being a resilient and innovative city, by means of an investment in social urbanism in peripheral areas (Roldán & María, 2013).

The notion of periphery has been redefined through these urban projects, bringing Medellín's marginalised neighbourhoods closer and making the State's presence more visible through urban projects (Leibler & Brand, 2012). These neighbourhoods and their more peripheral parts have a significant number of trails (Saldarriaga, 2010). This is why studying the trails located around the Cerro Pan de Azúcar can become structural elements contributing to adequate tourism planning, since planning through the design of trails has been developed until achieving important scientific methods of planning.

In the case of Medellín, local leaders found that the best form of developing the poorest and most vulnerable territories in the city was through social urbanism, where this type of construction has been redefining the notion of periphery, bringing marginalised neighbourhoods closer and making the State's presence more visible through urban projects (Leibler & Brand, 2012). Similar to this social civil work, in the peripheries of the



central-eastern district, the Jardín Circunvalar de Medellín project, promoted by the Urban Development Company (EDU, for its Spanish acronym), was completed between 2014 and 2016, which established a project to improve urban-rural public spaces along the peripheral line and invested in understanding and acting on the protection and reorganisation of the territory through an exercise in public design.

A notable results from this project, is committing to the environmental recovery of Cerro Pan de Azúcar as an ecological park accompanied by the surrounding neighbourhoods and the Educational Institutions that were in the hill's area of influence (Villa, 2010) and the adaptation and restoration of some interpretive trails located on the slopes of the hill. In this scenario, the trails with tourism potential are an effective tool that leads to observing and reflecting on the landscape, supporting interaction between society and nature since, according to the Central American Commission for Environment and Development (CCAD, for its Spanish acronym), they facilitate visitor travel in these types of areas (Reyes, Torres, Flórez, Farleidy & Meza, 2017). In addition, the trails enable nature's sustainability in function of the richness of the landscape, generating environmental awareness in visitors. It is important to clarify that the term 'trail' is more recurrent in tourism-ecological literature (Carbonell, 2011; Santarém, Silva & Santos, 2015; Borla & Vereda, 2012), while the term path is used mostly in historical and archaeological literature (Botero, 2007; Vitry, 2007).

### Materials and method

To identify the trails with potential for tourism, exploratory research was carried out, using a qualitative approach. To do so, the research group came together with members of the community, making it possible to take a tangible approach of the territory, in order to better understand the community's tourist potential.

Participant observation was applied as an instrument for data collection (Kawulich, 2005). In addition, five fieldwork sessions were conducted between the months of June and November 2016, with a time interval of one month between trips. During each visit, different activities were carried out, such as direct observation and photographic recording (Dupont, Ooms, Antrop & Van Etvelde, 2017), direct communication with the territory's inhabitants (Bernard, 1998), systematic registration of tourist attractions using technical sheets to create tourism inventories of the Ministry of Commerce, Industry and Tourism (Sheet 1) that consider the biotic, abiotic and anthropic components present in a territory (Borla & Vereda, 2012); (Ministry of Commerce, Industry and Tourism, 2010) and the development of topographic profiles. Regarding this last record, two hundred photographs were taken from different angles to obtain a panoramic view of the territory (Dupont, et al., 2017), where the peripheral urban edges reach a considerable height and you can see much of the panoramic view of the city of Medellín.

1. GENERAL CONCEPTS					
1.1. Name					
1.2. Department		1.3. Municipality			
1.4. Village, Rural Settlement or Town					
1.5. Manager or Owner					
1.6. Address/Location					
1.7. Phone/Fax					
1.8. Distance (from the nearest municipality)		1.9. Type of Access			
		Land	Water	Rail	Air
1.10. Instructions for access:					



<b>2. CHARACTERISTICS</b>	
2.1. Code Assigned	
2.4. Description:	
<b>3. ASSESSMENT SCORES</b>	
<b>QUALITY</b>	<b>SCORE</b>
State of Conservation (21)	
Composition of the Property(21)	
General Representativeness (28)	
Subtotal	
<b>MEANING</b>	
<b>TOTAL</b>	
Processed by:	Date:

Sheet 1. Technical sheet for tourism inventories. Source: Ministry of Commerce, Industry and Tourism, 2010. Methodology for drafting the tourist attraction inventory.

To identify the trails (Table 1), five trips to the Centre East district were arranged as follows: first trip: El Faro–CAI Altos de la Torre Neighbourhood and Camino Prehispánico Trail; second trip: Ruta de la Vida Trail; third trip: Ruta de Campeones Trail; fourth trip: Camino de La Acequia Trail and, finally; fifth trip: General tour through the Centre East district, where features likely to be regarded as tourist attractions were identified (Table 2). The fifth trip was completed in three sessions during the month of April 2017, which allowed us to conduct visual surveys through tours around the area, but also by means of the streetcars and overhead cables transportation system, which allow for a broader perspective to appreciate the scenery and understand the hiking and mountain biking routes.

No.	Trail name	Type and characteristics
1	Ruta de Campeones Trail	Suitable for walkers and bicyclists.
2	La Acequia Trail	Traditionally used by local inhabitants. Visitors started using it recently.
3	Camino de la Vida Trail	Suitable for walkers, consisting of paved roads, ramps, bridges and stairs.
4	Camino Prehispánico Trail	Historical trail, whose route predates the arrival of the European conquerors to the territory,
5	El Faro Neighbourhood – CAI Altos de la Torre Trail	Trail created spontaneously in the 1980s when the first informal settlements were established.

Table 1. Trails identified. Source: Created by the authors

No.	Attraction	Feature type
1	Protected Hill Cerro Pan de Azúcar.	Environmental and landscape setting.
2	13 de noviembre Ecopark.	Located on the slopes of the Hill, characterised by having eco-gardens, visible from the Camino de la Vida and Ruta de Campeones trails. Recently built.
3	Campo Santo de Villatina Ecopark.	Located on the slopes of the Hill. Area reforested by conifers. Considered holy ground as several hundred people were buried in this location after the catastrophe caused by the mass movement in 1987.
4	Las Tinajas Ecopark.	Located on the slopes of the Hill. Recently built, it has a synthetic-grass soccer field, a gym, playgrounds and public restrooms.
5	Sol de Oriente Environmental Classroom.	It consists of an open butterfly park, a solar power plant, an autonomous composting system and structures for vertical vegetable production.
6	Sol de Oriente Articulated Life Unit (UVA, for its Spanish acronym).	A building that houses an outdoor synthetic-grass micro soccer field, an indoor basketball court and water fountains,



7	San Antonio La Libertad Articulated Life Unit (UVA).	A building that houses a children's playground, pedestrian trails, spaces for cinemas, theatres, panoramic viewpoints, among others.
8	Ayacucho Tram.	Mass transportation system that connects the communes eight and nine with the city centre.
9	13 de noviembre Metro Cable Station.	Station connected to the M line of the Metro Cable system, which connects to the Ayacucho Tram at the Miraflores Station.
10	Villa Sierra Metro Cable Station.	Station connected to the H line of the Metro Cable system, which connects to the Ayacucho Tram at the East Station.

Table 2. Tourist attractions identified in the area, which complete the tourism supply. Source: Created by the authors.

The Google Earth Pro tool and a GPS system were used to create the profile of each trail, through the use of layers, importing level curves that fluctuate every 20 metres, according to the height. The information was entered in the Auto CAD 2013 software, version 19.1, to graph the trails, based on a starting point and an ending point, identifying each point with its respective geographic coordinates.

The route of each trail had a longitudinal division every hundred metres. It should be noted that the last division, that is, before reaching the final stretch of each trail, was not every 100 metres, since the measurement of metres per unit was taken into account for precision purposes. The height was graphed every twenty metres, according to the altimetric differentiation of the contour lines. To obtain the slope of each path, we found the slope of the starting point and the ending point, tracing a single slope. Which gives an average slope of the path represented as a percentage.

At the end of the chart, where the altimetry of each trail is represented, there is a space where the degree of difficulty is noted according to the slope or elevation grade, which is the element that defines the degree of difficulty. This instrument technique is based on the method applied by Serrano and Alarte (2008) to determine a trail's accessibility factor, based on the information provided by MIDE Excursions (Paris, 2003) and recommended by the Spanish Federation for Mountain and Climbing Sports (FEDME; Spanish acronym) (Turmo, 2007). The following explanation is taken from the aforementioned authors, according to a table that notes the accessibility factor:

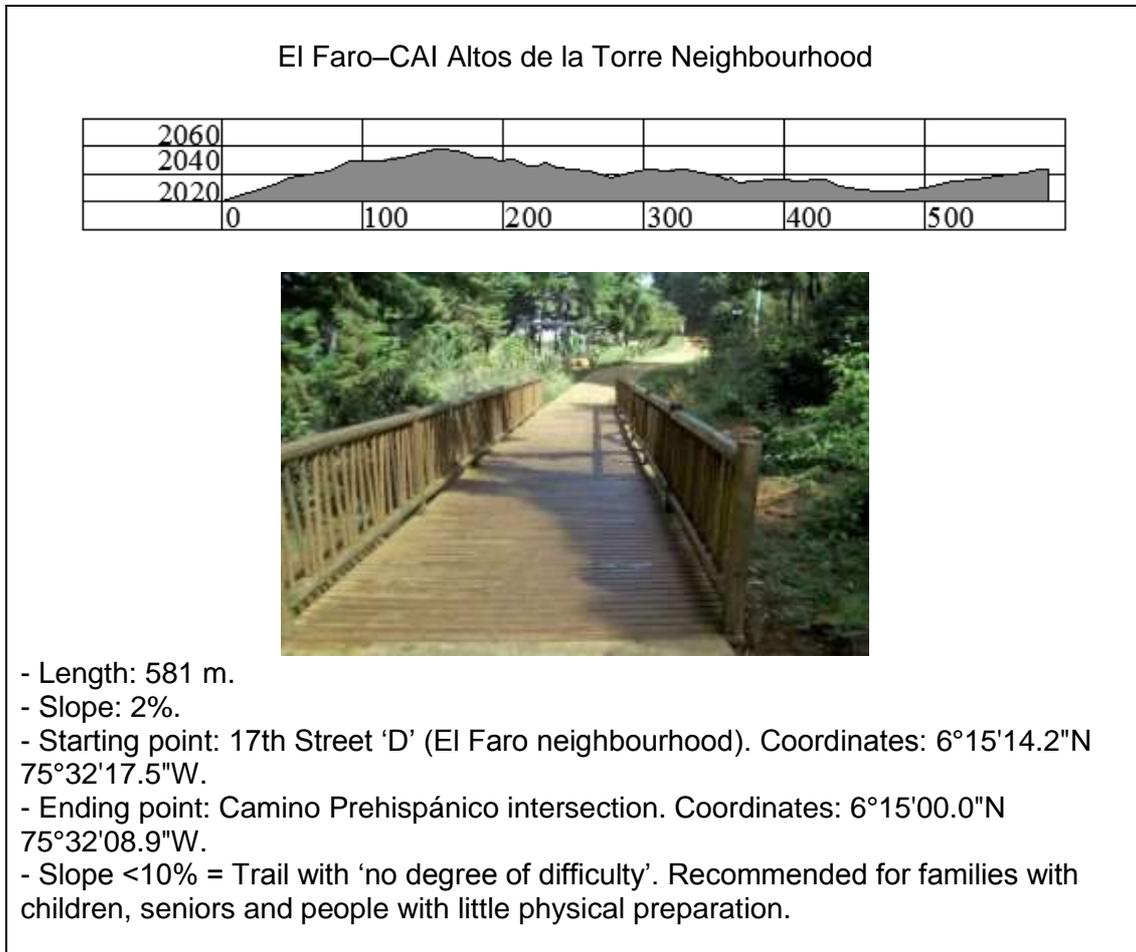
- A trail with a slope of less than 10% is defined as 'no degree of difficulty'.
- A trail with a slope between 10% and 20% is considered 'of average difficulty'.
- A trail with a slope greater than 20% is considered 'of high difficulty'.

## Results

When crossing the borders of the Centre East district and the view from the summit of Cerro Pan de Azúcar, the path characteristics were verified, which had already been identified in other researches: eroded hillsides, hectares of primary and secondary forests González (2003); cited by Marín, et al (2014), historical trails (Botero, 2007); biotic and abiotic characteristics of the territory (Marín, et al., 2014) and anthropic features (Borla & Vereda, 2012) of the environments that make up the landscape in question; the identification of basic infrastructure, tourist resources, accessibility of the location (de Oliveira-Matos, Chim-Miki, Medina-Brito & dos Santos Junior, 2015).

What was observed: El Faro–CAI Altos de la Torre Neighbourhood Trail, refurbished by the Urban Development Company (EDU, for its Spanish acronym). In general terms, this is a flat trail; its route is located at an elevation of 2,040 metres above sea level. This section includes the areas of the El Faro, Altos de la Torre, El Pacífico, Llanaditas and Golondrinas neighbourhoods, in the eighth district of Villa Hermosa. The path starts in

El Faro Neighbourhood, connecting directly at the end of 17th Street, which can be reached by vehicles and finally connects to the point where Camino Prehispánico and Ruta de la Vida are also located. The path is paved with retaining walls in places where there is a risk of land movement. It has several sections with wooden bridges to make up for some difficult terrain, such as crossing water sources or rough patches of land. When walking the path, you can see terraced crops, a technique that staggers land with considerable slopes, making better use of the land.

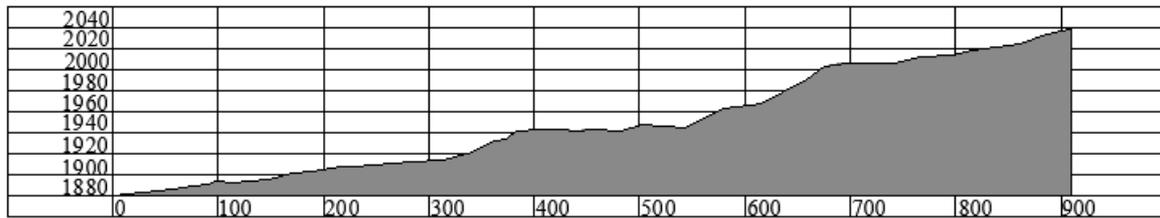


Sheet 2. Altimetry of the El Faro–CAI Altos de la Torre Neighbourhood. Source: created by the authors.

Camino de la Vida Trail: The cobblestone pavement construction stands out. The blocks have two different designs according to the terrain: in some sections, they are polygonal while, in others, they are rectangular. These geometric designs imply that binders do not need to be used to connect the blocks together, making installation easy but, above all, causing little impact on the load-bearing ground, since the paving stones settle on layers of sand and gravel that do not need mortar. Also, given its permeability, rainwater easily flows through to the soil. The trail walls were built using rustic and polygonal quarry stones, which are supported with masonry and adhered with mortar.

The trail runs along an inclined slope that goes from the Las Tinajas Ecopark, located at 1,760 masl up to 2,040 masl, where it meets the Camino Prehispánico Trail. In general terms, the slope of the trail is steep, since there are stretches of the path that have slopes of up to 17°. The solution to these slopes is the incorporation of stairs with wooden handrails and tubular structures.

### Camino de la Vida

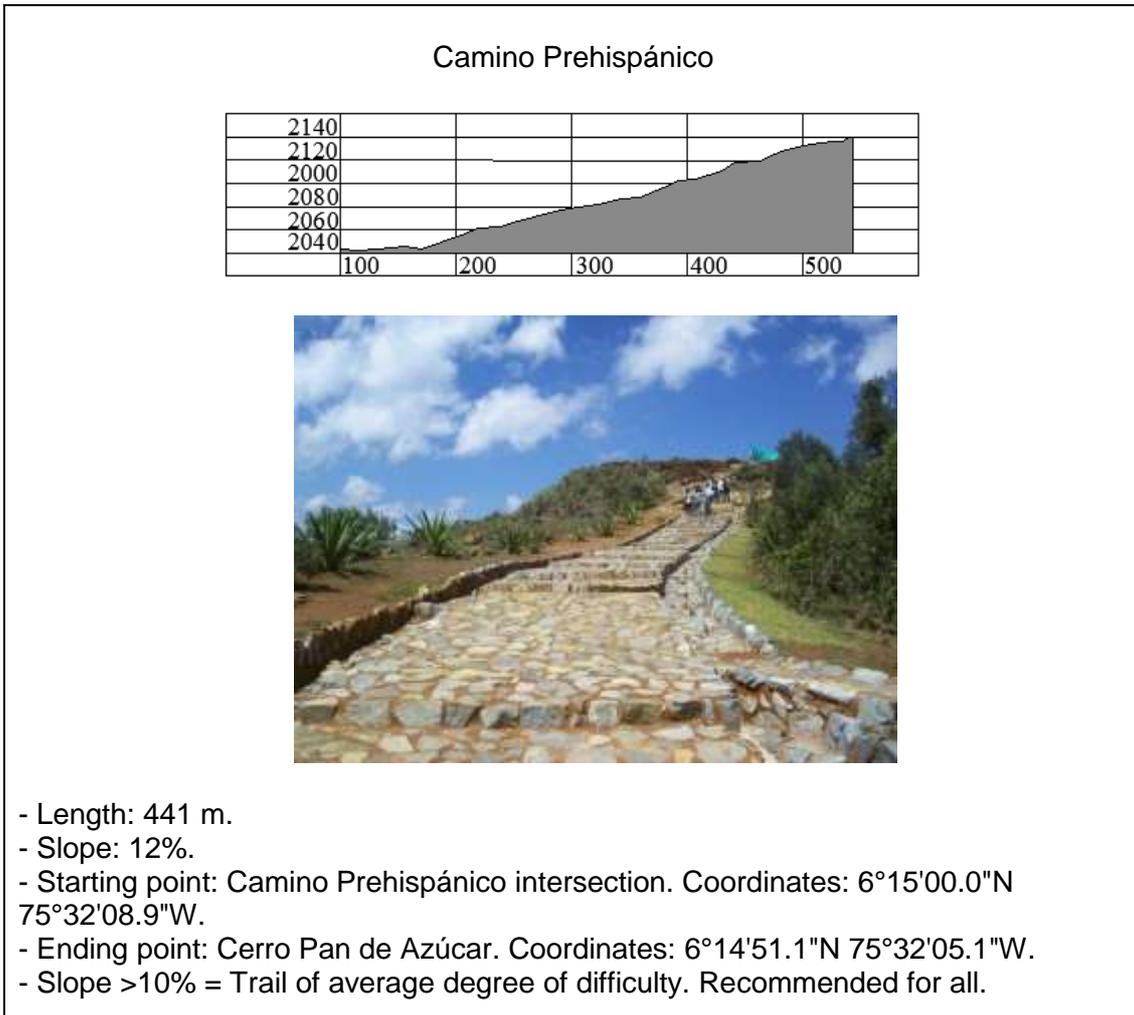


- Length: 904 m.
- Slope: 11%.
- Starting point: 56th Street No. 17 (Sol de Oriente neighbourhood): 6°14'53.7"N 75°32'19.5"W
- Ending point: Camino Prehispánico intersection (Cerro Pan de Azúcar): 6°15'00.0"N 75°32'08.9"W
- Slope >10% = Trail of average degree of difficulty. However, this trail connects to the Camino Prehispánico. The routes of both trails become more demanding and require some physical preparation, or being willing to walk more than 3 hours (counting returning to the starting point). Recommended for individuals who frequently perform physical activity.

Sheet 3. Altimetry of the Camino de la Vida Trail. Source: created by the authors.

Camino Prehispánico Trail: The original layout of this path runs along a prominent slope that goes from 2,040 masl to 2,138 masl; an altitude that corresponds to the top of Cerro Pan de Azúcar. Due to its poor conservation conditions, the path was improved by means of a project led by Archaeologist Inés Correa. The updates included replacing almost all of the stone slab surfaces. Most of the trail lost the original stone foundations; however, some parts of it are still the original ones. This path is of great interest from a historical point of view, not only because of its tangible value but also because of its intangible value, as it contributed to the social dynamics of the territory for several centuries and still does. The Camino Prehispánico passes through two scenic areas: the Camino Prehispánico section, where it connects with the Camino de la Vida, passing about 250 metres of a forest that has native vegetation and, at the same time, vegetation reforested by man, noticeable above all the pine cultivation. The EDU planted 21,000 trees, among which are giant caper, *Persea caerulea*, cedar, laurel, oak, snakewood, among other species (EDU, 2017). In this section, walkers enjoy a shady route provided by the vegetation found here. When Camino Prehispánico reaches the last 150 metres to arrive

at the top of Cerro Pan de Azúcar, the pines disappear to give way to a clear view, where travellers can see over the entire horizon.



Sheet 4. Altimetry of the Camino Prehispánico Trail. Source: created by the authors.

Ruta de Campeones Trail: Built between 2015 and 2016 by the Urban Development Company (EDU) and closely linked with the metropolitan area of the Aburrá Valley, this project has a great impact on local communities and visitors. When visiting the territory, it is clear that the flooring construction is comprised of rectangular cobble stones interlaced with lateral waterways for rainwater drainage.

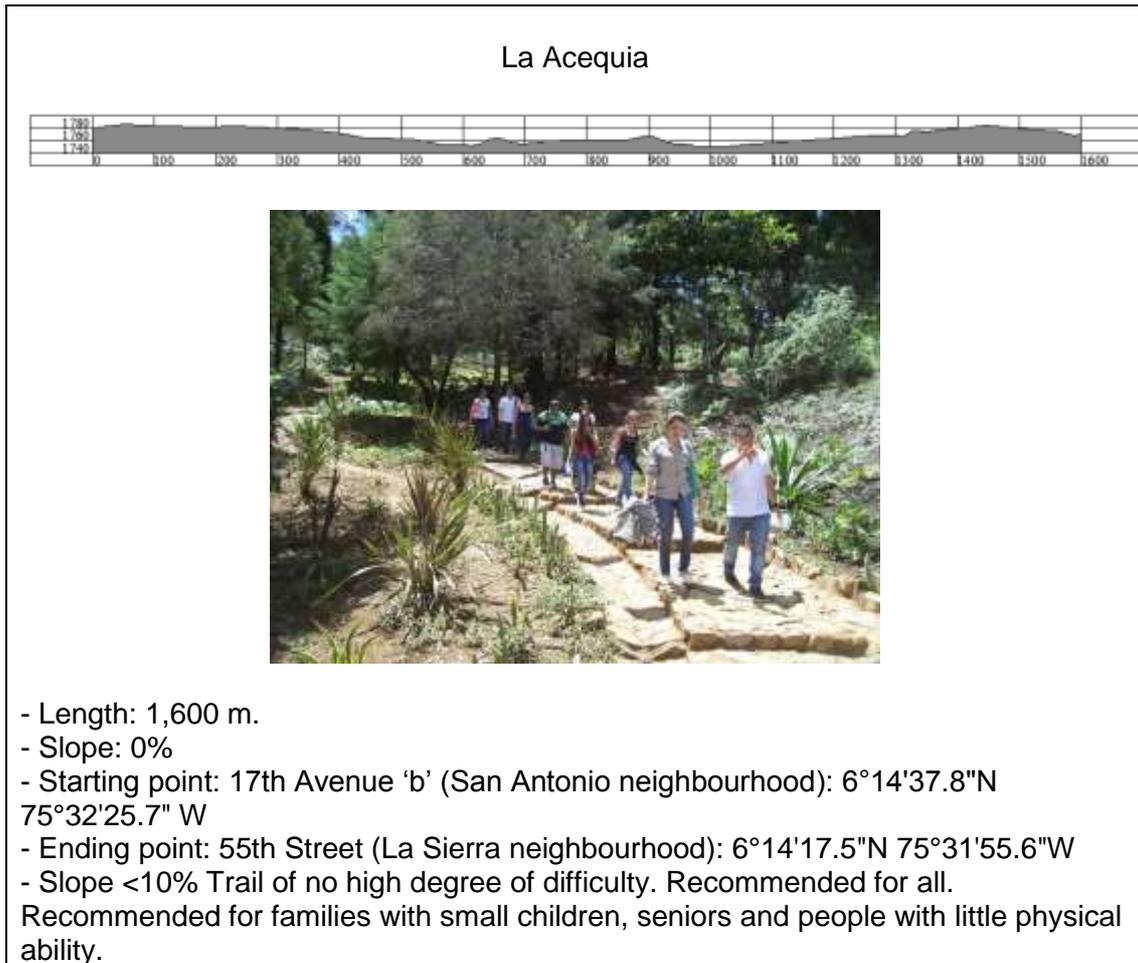
The design of this route considered traffic, not only from walkers but also from bicyclists, as an eco-friendly form of. This route has an almost flat layout, with some parts that are at a slight incline, and road signs show a wide range of information for those who travel along the path by bicycle. Most of the route is located at an altitude of 1,820 to 1,840 masl, since the route is generally flat. The route passes through scenic green spaces. Low shrubs, ferns, herbaceous plants and scattered pines are elements that constitute a unique landscape.



Sheet 5. Altimetry of the Ruta de Campeones Trail. Source: created by the authors.

La Acequia Trail: Although La Acequia is of high historical value, this water channelling system was not taken into account to be included as a point of historical interest for Medellín. In some parts of the trail, a few metres away from La Acequia, wooden bridges have been built, in order to save some sections cut by ravines. The La Acequia path is on two levels that range between 1,760 and 1,780 masl. It should be noted that the canal's water system level is 1,780, but there are sections of the road that deviate a few metres from La Acequia's 'almost horizontal' line.

At the moment, this trail is being adapted, since a few years ago it was a footpath. La Acequia marks the border between urban and rural, running through a flat area without much slope. The trail crosses the Llanaditas, Trece de Noviembre, Villatina, San Antonio, Villa Liliam, Villa Turbay and La Sierra neighbourhoods. The La Acequia path constitutes an axis that articulates the peripheries of the Villa Hermosa and Buenos Aires districts. When the path crosses the Llanaditas, Trece de Noviembre, San Antonio, Villatina and Villa Liliam neighbourhoods, a considerable number of indigenous dwellings, classified as stratum 1, which is the lowest social population class in Medellín (poor people), can be seen on its side.



Sheet 6. Altimetry of the La Acequia Trail. Source: created by the authors.

The tourist route of Cerro Pan de Azúcar is shown below, where the integration of trails through the natural axis of Cerro Pan de Azúcar can be seen (Figure 2).



Figure 2. Trails near Cerro Pan de Azúcar. Source: prepared by the authors based on a Google Earth template. 1. El Faro–CAI Altos de la Torre Neighbourhood Trail; 2. Camino Prehispánico Trail; 3. Camino de la Vida Trail; 4. Ruta de Campeones Trail; 5. La Acequia Trail.



## Conclusions and discussion

Enhancing peri-urban paths through urban landscape interventions and with the joint effort of the local population produces positive effects in fragile spaces where land altered by human activity and landstill preserved in its original landscape and environment converge.

Through urban planning and social intervention from local administrations, the responsible use of trails is promoted, which in many cases serves as infrastructure for domestic and tourism use. With adequate planning, strategies aimed at the sustainable development of these areas are successfully put into action This is why the peri-urban trails are a fundamental tool to preserve natural environments, where the biotic, abiotic and anthropic elements are combined so that visitors find an environment conducive to alternative tourism practices, under a framework of sustainability and care for the environment. Currently, peripheral trails have become a recurring theme for regional urban studies, tourism planning and the reinforcement of sustainability discourses in peri-urban environments. The issue focuses on the fact that these infrastructures, through the value and use assigned to it, can become the cultural heritage of a place and provide added economic value for local inhabitants.

In this sense, the trails in peripheral city environments require systematic study where the technical, theoretical and social views of professionals who apply their approaches with broader spectrums come together to understand that the aspects that these trails address go beyond occupying a physical landscape, because the socio-spatial and economic aspects are binding elements for the protection and preservation of these infrastructures with tourism potential.

That is why the discussion should focus on the multi-disciplinarity that encompasses different fields of knowledge and that have trails with tourism potential as their object of study. Together, public administrations, the academic sector and professionals in tourism, anthropology, archaeology, architecture, urban planning and experts in planning and the environment must unite efforts so that the preservation and adaptation of peri-urban trails contribute to planning models in city peripheries and their organisation. However, nothing will be accomplished if unified efforts are not accompanied by participation from local communities. This is why it is necessary for political actors to contribute to the strengthening of citizen participation mechanisms.

In short, this proposal aims at building a significant contribution to add to the visibility of trails in peripheral areas of the city. While it is true that the city of Medellín has been recognised for its resilience, through innovative infrastructures, it is also true that its commitment to the environmental preservation of peripheral environments—in this case through trails with tourism potential—becomes an instrument of sustainability. Ecosystems of the Cerro Pan de Azúcar environment improve with visibility. In addition, local inhabitants who live in the neighbourhoods located at the foot of the hill can also take advantage of this, because the research that inspired this proposal has identified a variety of entrepreneurship opportunities based on sustainable tourism in the eighth district of Villa Hermosa and the ninth district of Buenos Aires (Centre East zone of Medellín).

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## Appendix

Figure 1. Map of the area of study. Source: created by the authors, not to scale, based on cartographic templates from the Agustín Codazzi geographic institute and the metropolitan area of the Aburrá Valley.

Figure 2. Trails near Cerro Pan de Azúcar.

Table 1. Trails identified.

Table 2. Tourist attractions identified in the territory that provide tourist offerings.

Sheet 1. Technical sheets for creation of tourism inventories. Source: Ministry of Commerce, Industry and Tourism, 2010. Methodology for creating the tourist attraction inventory.

Sheet 2. Altimetry of the El Faro–CAI Altos de la Torre. Neighbourhood Trail.

Sheet 3. Altimetry of the Camino de la Vida Trail.

Sheet 4. Altimetry of the Camino Prehispánico Trail.

Sheet 5. Altimetry of the Ruta de Campeones Trail.

Sheet 6. Altimetry of the La Acequia Trail.

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