

Greenery at the Service of Leisure for Territorial Attractiveness: The Case of the El Mridj Recreational Forest and the Bardo Urban Park in Constantine-Algeria

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ABSTRACT

Green spaces are a natural or artificial ingredient embedded in the urban environment, serving multiple roles across various aspects (social, economic, spatial, and environmental). They host leisure and relaxation activities for individuals, hence the diversity of reasons for visiting and the recreational practices adopted by the populations.

The El Mridj forest and the Bardo urban park in Constantine provide multiple benefits and play an important role as green spaces for recreation and oxygenation, and they are seen as promising areas with considerable attractiveness for the city. The objective of this article is to identify the most common recreational practices in these two spaces and evaluate their impact on promoting the territorial attractiveness of Constantine. For this, we are considering a mixed survey method (qualitative and quantitative) among users, in order to address our main question regarding the influence of their attendance on the creation of territorial dynamics.

Keywords: El Mridj recreational Forest, Bardo Park, leisure, attractiveness, Constantine.

1. Introduction

Any urban space is a spatial medium that can be used in different ways by occupants or visitors, as is the case for leisure spaces, which can be used in several different ways.

The reasons for using a space vary from person to person, depending on a range of criteria that influence the choice of space, the way in which it is used and the type of activity that can be carried out there.

Among these leisure spaces, green spaces are convivial and oxygenating places that not only allow individuals to gather in the middle of nature, offering them moments of pleasure by benefiting from the fresh air, but also contribute to the dynamic of the whole area in which they are inserted, by generating attractive flows and stimulating local animation.

They have always been a key component in regional planning, providing a breath of fresh air for the town and its inhabitants through their ecological and social role. They help to improve the environmental quality of areas by maintaining the balance of ecosystem parameters.

From a social point of view, green spaces are the spatial base for the various activities and practices of relaxation and entertainment, because their welcoming layout, with the installation of furniture for rest and games, is a factor of attraction of a social nature, which increases the flow of visits, giving rise to convivial practices which systematically induce links of sociability between individuals (Havret, 2020). In addition, the use of green spaces in the urban environment is based on qualitative criteria that users adopt to judge a space as their favourite, mainly focusing on the safety and accessibility of the space, as well as the degree of comfort provided by the space (Bennasser, and al., 2020).

Green spaces, as a natural or artificial component, also play a part in the economic development of areas (Ait-Lhadj & Salhi, 2021), through the transfer of the image of their identity, which is reflected in the ways and types in which they are appropriated, as well as through the visitor flows that animate the various accompanying sectors; because a recognised green space can not only be the subject of a leisure destination on a local scale, but also a tourist destination on an internationally attractive scale (the case of Dubai Miracle Garden).

There is a wide range of green spaces made up of several types and sub-types depending on their localisation and purpose: forests, urban and peri-urban parks, gardens, squares, crossroads and roadside verges, etc. (Belkacemi, 2018), which can be places of leisure and relaxation. Recreation in these places can involve a multitude of practices that vary from one person to another, depending on a number of social, cultural and economic criteria, etc., which create categories of preference for certain spaces over others, including: walking, contemplation, rest, meeting people, sport, picnics, games, etc. (Ali-Khodja, 2010).

Green leisure optimises nature tourism of a recreational or scientific nature, at a time when the richness of the flora and fauna of a given territory can be considered fertile ground for scientific studies and discoveries of all types of plant and animal species, in addition to the attractiveness that could arise through the flows and practices of adventure leisure enthusiasts (climbing, hiking, camping, etc.). In this context, we would also mention ecotourism, which focuses more closely on sustainability and preserving the balance of ecosystems and the environment as a whole (Ruiz, 2014).

In Constantine, the lack of green spaces has an impact on the population's practices because of the overcrowding of these spaces, particularly during periods of free time and holidays. With a ratio of 0.34m²/inhabitant in terms of landscaped green spaces (Ali-Khodja, 2011), the inhabitants of Constantine frequent these spaces for recreational purposes and try to adapt their practices to the availability of the various existing amenities.

The aim of this article is to understand how Constantine's residents and visitors behave in relation to forests and green spaces for leisure, in order to arrive at a diagnosis of the state of play with regard to the reasons for using these spaces, which in turn define the ways in which they are appropriated, and finally to measure the impact of these practices on the dynamics and attractiveness of the area.

To do this, we raise the following issue:

What are the most widespread recreational practices in the recreational forest and Bardo Park, and how do they contribute to the attractiveness and local dynamics of the city?

2. Materials and methods

2.1. Materials

2.1.1. Presentation of the study sites

Constantine is an inland city in eastern Algeria, 431 km from the capital, covering an area of 2297.20 km². It is a thousand-year-old city with a wealth of cultural and landscape potential.

The city's forests and greenery are an environmental and landscape feature that has always been over-exploited by its citizens.

We have therefore chosen to study two large green spaces in Constantine, known for their recreational vocation: the El Mridj recreational forest and the Bardo urban park.

Why Bardo Park and El Mridj Forest? The Parc Bardo, Constantine's first urban park, is located right in the city centre. It covers a vast area, with a variety of natural, educational, play and leisure spaces. Use of the park varies according to the season and time of year, attracting many visitors. The El Mridj forest was chosen because of its unique status as a classified recreational forest in Constantine.

➤ **The El Mridj forest:** a 202 hectare natural suburban forest known for its wealth of plant species, offering an attractive natural landscape and an opportunity to add oxygenation value to the city of Constantine.

In the 1980s, 30 hectares of the forest were developed as a recreational forest, with the installation of equipment and infrastructure for recreational activities (children's playgrounds).

It underwent two rehabilitation and improvement operations in 2012 and 2013, providing visitors, particularly the people of Constantine, with areas for relaxation, sport and leisure activities, with great potential for investment and the creation of many jobs (Forest conservation, 2018).

Since these last interventions, the El Mridj recreational forest has not received any new maintenance initiatives until its definitive closure on 30 September 2024 due to its deteriorating condition.

In terms of mobility, it is accessible from several access points, given its localisation at a crossroads efficiently served by a multitude of road infrastructures (the East-West motorway, wilaya road 113, and national route 3) (Fig.1, Fig.2).

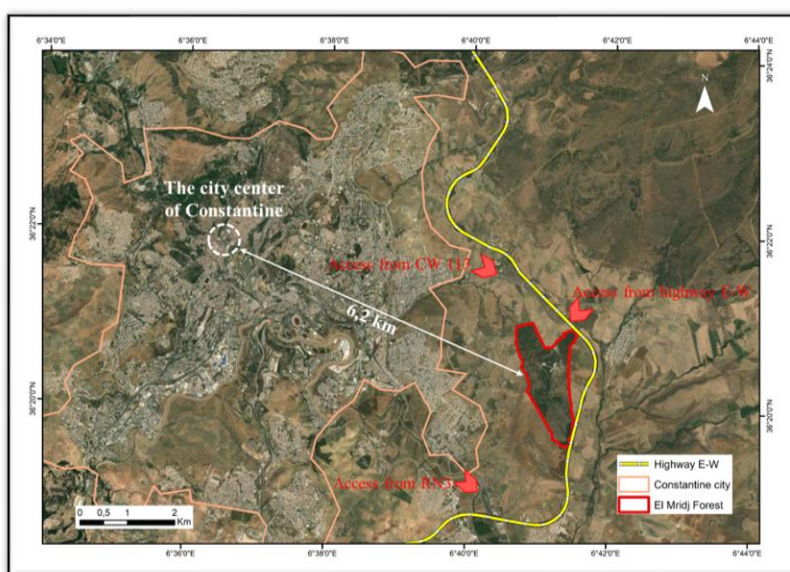


Fig 1. The localisation and accessibility of the El Mridj forest in relation to the city of Constantine (Source: authors, 2024)

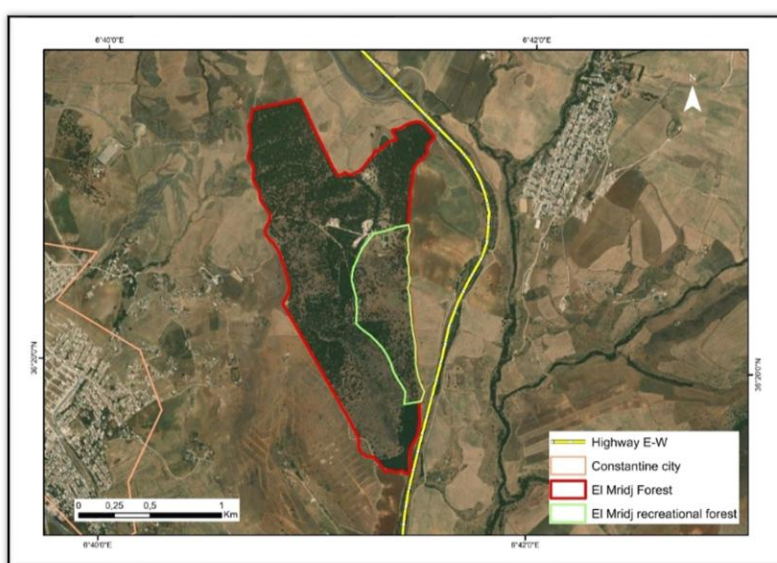


Fig 2. The situation of the recreational forest in relation to the total forest area of El Mridj (Source: authors, 2024)

➤ **Bardo Park:** the first urban park in the city of Constantine, developed in 2018 on land previously occupied by squatter settlements, eradicated as part of urban improvement operations. Covering an area of 65 hectares, this secure park has a host of educational, leisure, shopping and parking facilities, as well as the street furniture needed to make visitors feel at home. In 2023, the MégaLand theme park was inaugurated in the southern part of the park (Fig.3).

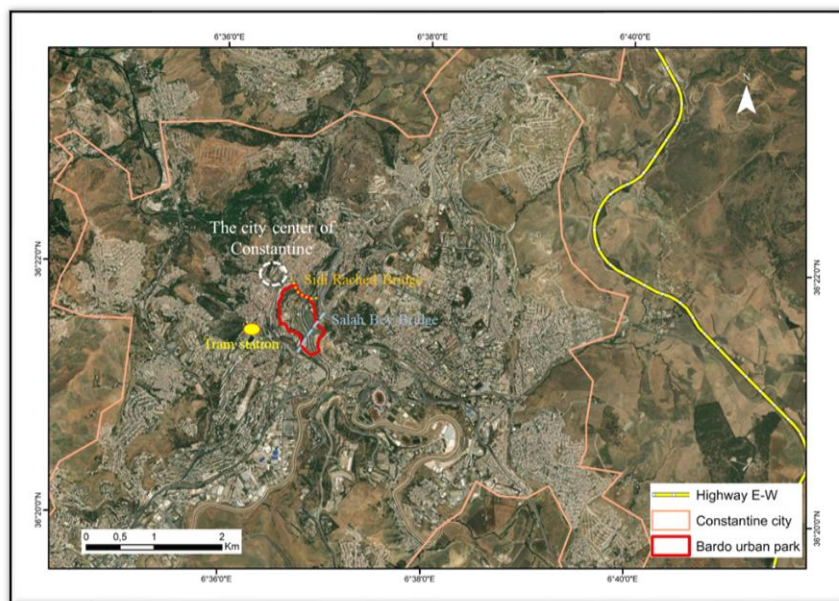


Fig 3. Localisation of the Bardo urban park (Source: authors, 2024)

2.1.2. Presentation of the survey sample

The population selected for the interviews randomly included all visitors to the forest and the park (all categories), as well as the staff responsible for maintaining and guarding the leisure areas. We interviewed 100 visitors, 4 park security guards and the car park wardens.

2.1.3. Survey tools

Survey tools are the basis of all fieldwork. To this end, we opted for the use of Geographic Information Systems (GIS) in the spatial localisation of our two case studies in order to precisely delimit the study area of each case, as well as its situation in relation to the city of Constantine (localisation and accessibility).

In our fieldwork, we initially relied on floating observation by visiting the forest, while supporting our observations with questionnaires and interviews carried out with the sample population surveyed.

We have also opted for photography to demonstrate the most widespread practices, as well as to provide an overview of the visitor flows recorded in the forest and the park. This will enable us to focus our thoughts on the type of intervention and the areas of recommendation we should undertake to achieve our objective.

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2.2. Methodology

2.2.1. The qualitative method

In this study we applied the qualitative method by processing the responses obtained through floating observation and through interviews with visitors and employees in the two case studies. It should be noted that in this context, we chose to focus on the latter as a representative sample for analysis. This limited choice allows us to

take an in-depth look at the results specific to each space, with the aim of identifying areas for reflection and ideas for generalisation that can be applied to all similar spaces.

We therefore approached the target sample (already presented) and asked them a series of questions relating to:

- The space's capacity
- Number of employees
- Reasons for visiting
- Most common practices in the space
- Visitors' needs and expectations
- Their opinions of the forest and park landscape
- The practices that accompany recreational activity in each area
- Mode of travel
- Types of expenditure

Our survey was carried out over several phases of time, as shown in the following table:

Table: Survey periods. (Source: Authors, 2022)

Season	Period	Schedule	Persons surveyed
Spring/summer	Weekday	From 3 to 4 p.m.	Security personnel
	Weekday	From 3 to 6 p.m.	Visitors
	Weekend	From 3 to 6 p.m.	
	School vacations	From 3 to 7 p.m.	

2.2.2. The quantitative method

This method will involve counting the number of visitors to the sites, collecting data from environmental institutions such as the Constantine wilaya's environmental directorate and forest conservation department, and collecting data on visitor flows from the management departments of the two sites studied (the El Mridj recreational forest and the Bardo urban park).

3. Results and discussion

3.1. Constantine's potential for green spaces

The city of Constantine, like all Algerian cities, is experiencing a decline in green spaces and forests, due to a number of climatological factors, fires that ravage thousands of hectares every year, and the impact of accelerated demographic growth, which has favoured the encroachment of concrete to the detriment of greenery and nature.

Maintaining existing green spaces remains essential to keep them as a source of oxygen for the city and its population:

- 23 gardens in Constantine's capital, covering an estimated total area of 56.16 ha in the Zouaghi/University, Bellevue/Filali, Sidi Mabrouk/Daksi, CHUC/Bab el Kantara and downtown areas.
- 12 gardens in the El Khroub commune, covering 6.5 ha in housing estates and neighborhoods.
- 8 gardens in the new Ali Mendjeli city spread evenly over the districts, covering 11ha.

A forest capital spread over an area of 28074 ha (Directorate of the Environment, 2024) of which 1590ha are intended for leisure (free access), among which an area of 188ha is intended to accommodate leisure facilities; on the other hand, an area of only 30ha is currently exploited and developed for recreational purposes at the El M'ridj forest pending completion of rehabilitation work on the former Djebel El Ouahch amusement park (Forest conservation, 2018).

Table: Forestry/recreational forestry potential in the city of Constantine (Source: Forest conservation, 2018. Author's processing, 2019)

Forest	Area (ha)	Leisure area (ha)	Recreational area (ha)
Al moutazah : Ain Smara	30	/	/
Hadj Baba: 7^{ème} km - Cne	187	20	/
Mansourah : Constantine	32	/	/
Draâ Ennaga: Djebel El Ouahch	308	100	19 (in progress)
Bâaraouia : Khroub	48	15	/
El M'ridj : Khroub	202	30	30
Chettaba :Ibn Ziad/Ain Smara	650	/	/
Bkira : Hamma	113	23	/
Ain Bornaz :Ain Abid	20	/	/

There is a remarkable shortage of green recreational spaces compared to the size of Constantine's population, estimated at 1,059,000 (Harkat, 2023), particularly in the new towns and large housing estates, which are suffocating from overcrowding. This gave rise to the idea of the Bardo urban park, which could offer the people of Constantine a breath of fresh air, thanks to the variety of its flora, which constitutes an open-air botanical laboratory, as well as all the educational, recreational and consumer spaces that exist in the park.

In parallel with the Bardo project, a project to recalibrate the Oued Rhumel has been carried out, offering an additional opportunity for the site and the whole city, as the banks of the Rhumel, well developed for pedestrians and equipped with a cycle path, have become a favourite destination for lovers of outdoor sports.

A second city park, currently under construction in Zouaghi, with a surface area of 22 ha and two main zones (zone1: for sports and leisure, and zone2: for lakes and walks), will also add value to the city's green space ratios.

3.2. El Mridj and Bardo frequentation patterns and user practices

Forests and green spaces are convivial, oxygenating places that bring people together in the middle of nature, offering them moments of pleasure in the fresh air.

In Constantine, the lack of green spaces is having an impact on people's practices, as these areas are overcrowded, particularly during leisure and vacation periods.

To question the recreational practices that take place in green spaces and recreational forests, we chose to conduct our observations in the Bardo urban park and the El Mridj recreational forest.

The people of Constantine consider green space to be a first-rate place for relaxation. They frequent them in their free time, particularly at weekends and during school vacations, to enjoy a moment of rest amidst the greenery. The Bardo Park offers countless advantages! It is a secure space, equipped with parking, and composed of botanical gardens, a small educational farm, playgrounds, an amusement park, consumption areas, and furnished with the necessary urban furniture. From inside, it offers a breathtaking panoramic view of the two giant bridges, Sidi Rached and Salah Bey, revealing the history of Constantine past and present. In return, it is dominated by the heights of these two bridges, and thus kept in full view of passers-by and passengers alike!

Bardo Park's many qualities make it a favourite destination for the people of Constantine, who find all the amenities they need here. Groups of families and friends, men and women alike, enjoy picnics and small celebrations such as birthdays and graduation parties, while their children enjoy playing the various games set up there or attending the various shows put on by the park management (clowns, magicians, singing, etc.) (Fig. 4).



Fig 4. Visitor practices at Bardo Park

(Source: authors, July 2024)

During vacation periods, especially those that coincide with fine weather and summer, the park is overcrowded, making it difficult, if not laborious, to use. Free benches are rare, while children, for example, have to wait a long time for a simple swing ride! This proves that the park, despite its relatively well-designed setting, is incapable of managing the flow of visitors during periods when the number of visitors is generally high.

This situation has an impact on the quality of services provided in the consumer areas, which, according to a number of visitors interviewed on this subject, is becoming mediocre in the face of demand that exceeds supply.

From 2023 onwards (22/07/2023), when the MégaLand amusement park was inaugurated in the southern part of Bardo, there was a gradual relocation of flows to the new park. *“There's less flow to the park on the north and north-east sides, with most people heading for the new amusement park”*, says a security guard we interviewed in July 2024. In addition, several groups of individuals continue to frequent the park for reasons of relaxation and picnics, unlike families with children who are mainly concentrated in the southern part of the park thanks to the amusement rides. This has led to a change in the commercial premises of certain consumer spaces, which were located in the northern part, in addition to the installation of new businesses seizing the opportunity to set up within the perimeter of the new amusement park, given the large number of consumers who visit there.

This new distribution of spaces, flows and functions was at the root of the idea to create a walking itinerary, with a small paying tourist train running around the park, shuttling between the northern and southern parts of the park (departure and arrival points in the north, and a stop at the theme park entrance in the south).

From an environmental point of view, it's important to note that a growing number of disappointing behaviours, reflecting a lack of civic-mindedness on the part of individuals or groups, are disfiguring the image of the area. These include, but are not limited to, the throwing of garbage on the ground instead of placing it in the garbage bins set up throughout the park, making the task of the cleaning staff a laborious one.

In the case of the El Mridj forest, the situation is much less complex: the surface area is much larger, giving the population a more dispersed visitor effect, compared to the existing spacing between the different areas of the forest, which enables flows to be relocated by scattering them according to the practices of each visitor.

The forest welcomes large numbers of visitors during the public's leisure time, particularly at weekends and during school vacations that coincide with the fine weather seasons (summer and spring in particular), with daily visitor numbers ranging from 2,000 to 3,000.

These visitors find the forest the perfect place for their need to relax and unwind, and frequent the forest during periods of heavy traffic, which evoke a sense of security and being surrounded by people, unlike the ordinary times of year and days of the week, known for poor attendance expressed in social practices considered to be opposed to the values and mores of Constantinian society.

Thanks to the many observations we made on site, we noticed that the majority of visitors to the forest are families with children, who prefer to settle around the play areas to keep an eye on them at all times.

With the exception of a few groups, generally of young people, who prefer to isolate themselves in the forest to enjoy a moment of relaxation away from all the noise, they usually head for stretches of greenery at a distance from the play areas.

In order to frame our observations of forest users' practices in quantitative terms, we carried out a survey of 50 people, the results of which are interpreted in the following table (Fig. 5):

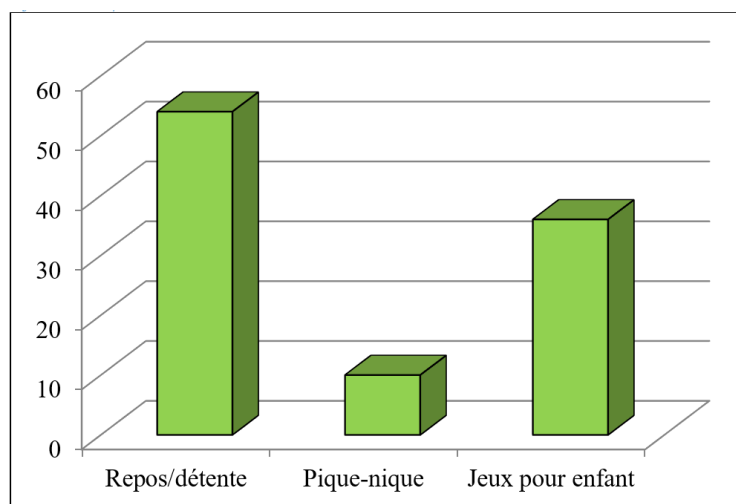


Fig 5. Practices of El Mridj forest users

(Source: authors, 2022)

The results obtained show that visitors to the forest come mainly for relaxation and rest (Fig. 6), while play-oriented visits only involve families with children, as the existing play facilities are suitable for children under 12 (Fig. 7). As for visitors who come for a picnic, they are mainly groups of friends or family from a more or less advanced age category.



Fig 6. Groups of individuals out for a stroll

(Source: <https://www.trfihi-parks.com/en/park-details/4829-El-Meridj>)



Fig 7. Massive presence of families at El Mridj forest playgrounds

(Source: authors, June 2018)

It's also worth noting that the three above-mentioned practices overlap in some cases, where we find that some visitors initially visit the El Mridj forest to take their children out to play; in doing so, they enjoy a moment of relaxation, sometimes indulging in an open-air meal. It is therefore certain that the practices already mentioned in the same context of frequentation mix and overlap, giving a particular physiognomy to the place (Bouhadjar, Keblouti, & Allioua, 2024).

This does not prevent us from pointing out that all the reasons given by users for visiting the El Mridj forest point to the same result, which is the -primordially- moral satisfaction obtained through the convivial moments shared by forest visitors.

It's also worth noting that, like the Bardo Park, the frequentation of El Mridj is accompanied by a series of negative behaviours, affecting the forest's flora as well as the furniture used for recreational activities. These practices emanate mainly from young people, and, what's more, from children sometimes left to their own devices, without any instruction from their supervisors, parents or relatives!

3.3. The impact of the visiting green spaces on territorial attractiveness

An area with leisure activities in general, and recreational green spaces in particular, is considered attractive thanks to the positive image it conveys (Allioua, 2021).

The attractiveness of the area generated by leisure activities in green spaces gives rise to considerable territorial dynamics, likely to increase employment opportunities through the creation and upkeep of green areas and the development of accompanying sectors such as the transport sector, which will be stimulated by travel, the accommodation sector, whose income comes from visitor flows, and the commercial sector, which will be the subject of activity parallel to leisure through catering services and the sale of various consumable items (Moreau, 2001).

As a result, the dynamism of all these sectors within an area can only provide economic efficiency, which in turn helps to promote the living environment of the local population, create favourable environments for investment in nature-based leisure activities, and improve the quality of the recreational offer to extend its range of attraction.

The attraction generated by recreation in green spaces not only increases local and international tourist flows for relaxation, but also guarantees the promotion of ecotourism, which favours sustainable tourism that conserves resources, by determining the modalities of moderate consumption.

4. Conclusion

Green" leisure areas are among the most popular sites for individuals, thanks to their role in physical and moral regeneration. They offer opportunities for relaxation to visitors, who find them suitable for their entertainment needs.

Those in the city of Constantine are a place of oxygenation and relaxation for the people of Constantine and the neighbouring wilayas. They are used in a variety of ways, depending on the motives of their visitors, who constantly shape their spatial and economic criteria, influenced by the degree of their attractiveness.

From a socio-spatial point of view, the analysis of the flows and methods of frequentation of the green spaces taken as a case study in Constantine (El Mridj forest and Bardo park), enabled us to draw up a diagnosis evoking the practices appropriate to the local and visiting population and to develop a consensus of complementarity between the various leisure activities aimed at increasing the attractiveness and dynamism of the city.

Constantine's green spaces are among the places most frequented by the local and regional population for recreational purposes, thanks to the moral well-being they provide, although the field shows that they attract more visitors when they are equipped with suitable play areas and street furniture, as the individuals who visit them show a permanent need for play facilities as an accompaniment to leisure or as the main reason for leisure.

From a spatial and economic point of view, the recreational green spaces available in the city of Constantine can contribute to the vitality of all leisure-related sectors and help to optimise its attractiveness by extending its radius of influence through the attraction they can exert. This dynamic affects the transport sector through the flow of people travelling there, and the retail sector mainly linked to consumption, unlike the accommodation sector which remains very little impacted by this type of leisure. This also includes job creation, and the embodiment of an environmental culture for the benefit of future generations, enabling them to forge strong links with their natural environment, fostering a sense of belonging and a desire to preserve their territory in the long term.

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