

Exploratory Study of the Use and Perception of Green Spaces by the Inhabitants, the Case of Constantine

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Abstract

Bringing nature into the city is one of the major concerns of today's cities. Natural spaces, and more particularly green spaces, are essential for a healthy and pleasant living environment. They have very important roles: social, economic, psychological, ecological, etc.

These spaces have different types, varying from architectural or formal spaces to natural or landscaped spaces, from spaces in the urban tissue to others more open to nature. On the other hand, the objectives and activities sought by users are also very different: rest, relaxation, sport, games, learning, etc.

It is therefore very important to understand the practices and perceptions of the users of these spaces, and to know their needs in order to improve the existing green network and to plan spaces that best meet their expectations, in order to make the most of the benefits and impacts of nature on humans.

Keywords: Constantine, Green spaces, perception, Survey, use.

INTRODUCTION

Today's cities face many environmental problems, including pollution and excessive consumption of space due to urban sprawl, hence the need to reintroduce nature into the city. Urban developments should increase their degree of vegetation, permeability, naturalness and biological continuity, as well as their tree cover, by integrating this data at the design stage. (Delavallade 2014). This is why green spaces are the ideal solution. In addition to their ecological role, they have other equally important roles: educational, decorative, recreational, sports, social, economic and even therapeutic. The presence of nature is, among other assets, a powerful stimulant for our creativity and thus for our further evolution. (YUDINA 2017).

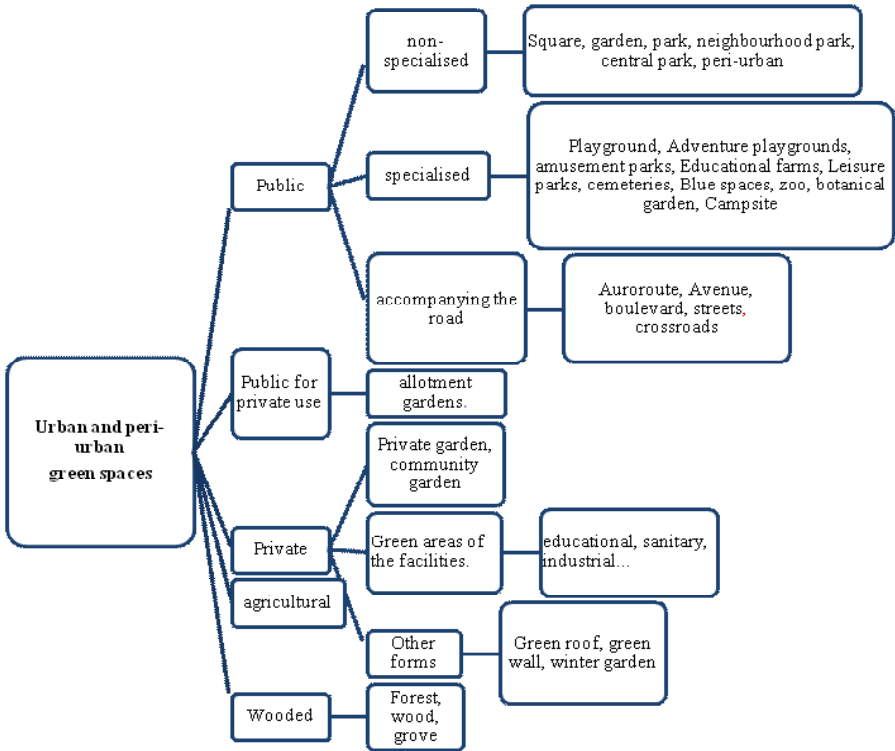
Constantine is a large and ancient city in Algeria, located in the east of the country and is the capital of its Wilaya. It is a very attractive city because of its university structures, economic structures, tourist sites, landscapes, etc. Its public gardens are mainly inherited from the colonial period, and the pace of creation of green spaces is very slow. It has just seen the creation of the first urban park (65ha), the largest in its history, located in the pericentral zone. In this work, we try to find out the use and perceptions of green spaces by the inhabitants of Constantine.

The Benefits of Nature in Cities

There is strong pressure from citizens for "nature in the city": an ambiguous term which is the topic of much writing, debate and controversy, and which feeds many controversial, utopian ideas about "the fertile city", "the resilient city", "the city in transition", "ecological urbanism, urban ecosystems and urban metabolism. (JEAN-BAPTISTE 2013). By definition, a green space is an area of variable size, wooded or planted, with a biological role and intended for rest, leisure, cultural and recreational activities. (LARCHER Jean-Luc 2012) » This concept also covers all green areas such as woods, parks, gardens, squares, and even line planting and companion planting ... As well as peri-urban and rural green areas, in particular forest areas and green corridors. (Ministère de l'équipement, du logement, des transports et du tourisme 1991). They are also, public and private spaces whose presence, extent and connections between them allow the expression and perpetuation of biological diversity. They form a set of spaces that are different from each other but complementary: parks and squares, building exteriors, gardens, green roofs, water bodies and their surroundings (Delavallade 2014). (Table 1). Green spaces are of many types and perform very important and different roles, natural

spaces in urban environments come in a range of different forms: tree and shrub-lined walks, squares, parks, green roofs and walls, allotment gardens and vegetable plots that encourage subsistence farming and unique natural areas (hills, forests, riverbanks, riverain, flood beds, etc.), they also come in several different styles: permanent or temporary, formal or informal, spectacular or more understated. (JEAN-BAPTISTE 2013)

Table 1. Typology of Urban and Peri-urban Green Spaces



In the urban environment, natural spaces are a response to different planning and design programming issues: to develop urban life, to create urban form, to reveal the invisible, to feed the collective memory, to energise the district or help restore social cohesion, etc. (JEAN-BAPTISTE 2013). The following table (2) shows 21 benefits of vegetation on our health and living environment.

Table 2. Scientific results on the benefits of plants in the city

Green sapces				
Mental health	Physical health	Ecology	Economy	Social
<div>-Improve the state of well-being, -Reduce stress and anxiety levels, -Reduce depression and suicides, -Increase safety and conviviality</div>	<div>-Improve overall health status, -Increase physical activity, -Reduce circulatory system diseases, -Reduce the mortality rate of disadvantaged populations, -Reduce social inequalities in health</div>	<div>-Increase the fight against global warming, -Reduce air pollution, -Reducing local temperatures, -Increase environmental education</div>	<div>- Increase the market value of lands -Improve the quality of the living environment -increase the attractiveness of the territories</div>	<div>-Increasing social dynamics, -Increasing the sense of socio-cultural belonging, -Increasing the sense of security, -Increasing social cohesion, -Reduce domestic violence</div>

Source : (Manusset 2012)

Presentation of the Wilaya Of Constantine: Capital of Eastern Algeria

The wilaya of Constantine is located in the north-east of Algeria, in a hinge zone between the Tellian atlas and the high plateaus. It is bordered by the wilayas of Skikda and Jijel to the north, the wilaya of Guelma to the east, the wilaya of Mila to the west and the wilaya of Oum-Bouaghi to the south. It is located 390 km from the country's capital (Algiers), 95 km from the coast, and 203 km from the Algerian-Tunisian border and 230 km from the gateway to the Sahara (Biskra). (Figure1)

It occupies a strategic position because it is the point of convergence of a great number of important axes, in particular the national roads: RN3, RN5, RN79, RN27, RN20, and the railway (line 3), which connects it to the Algerian North-East and to the rest of the country; it is also crossed by the East-West highway. This panoply of infrastructures, which allows North-South and East-West connections, has given it a strong attractivity at nationwide.

Our study area, which covers an area of 2244.77km², is administratively made up of 12 communes, 5 of which (Constantine, Elkhroub, Ain S'mara, DidoucheMourad and HammaBouziane) constitute the urban grouping. It contains 84.11% of the wilaya's population with an urbanisation rate of 78.90%, occupies only 34.29% of the wilaya's total area. Its population was estimated at 1.249.024 inhabitants in 2017, according to the national statistics office.

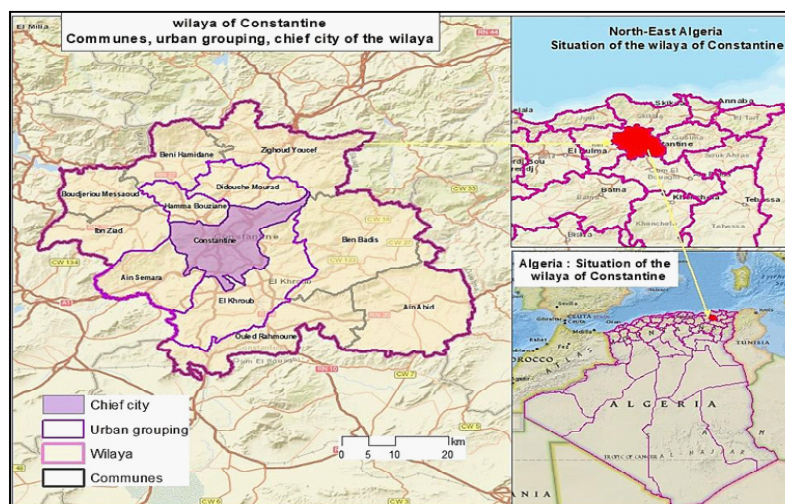


Figure 1. Wilaya of Constantine: Communes, urban grouping, chief city of Wilaya

Example of an Urban Green Grid in the Wilaya of Constantine: The Case of the City of Constantine

The cities of the wilaya of Constantine are generally characterised by the insufficiency and lack of public green spaces. The rate of creation of these spaces is very low and is limited to predominantly mineral spaces. The map (figure2) and table3 below present the public green spaces of the city of Constantine, which are limited to gardens and urban and peri-urban parks. There are 17 green spaces, including 14 gardens with an average surface area of 1ha, and an urban park (64ha) as well as two peri-urban parks belonging to forests (M'ridj and Djebelouahch).

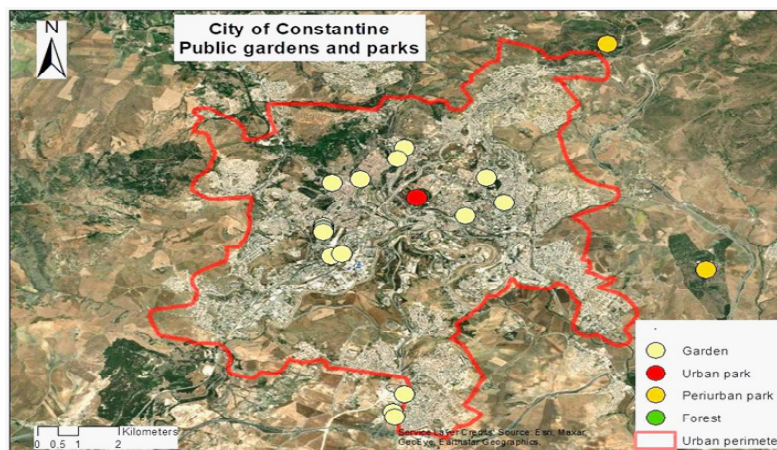


Figure 2. Parks and gardens of the city of Constantine

Table 3. Public green spaces of the city of Constantine

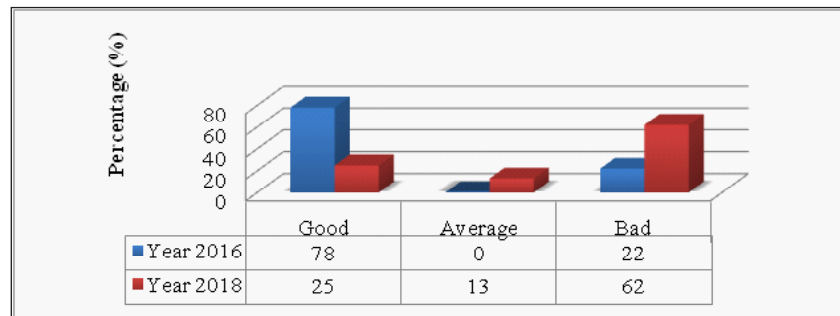
Types	Name of the garden	Area (m ²)
Public garden (14)	Bennacer (Sidi Rached)	12.000
	Guessoum (Saint Jean)	5734
	Filali	11500
	Jardins zouaghi (3)	31.402
	Beyrouth (SMK supérieur)	5000
	Square (SMK inférieur)	1723
	Sousse	5000
	Bourssas Cherif	20.000
	Djenna	2318
	Bosquet (SMK)	2620
	Guerfi Abdelhamid (Cilloc Belle vue)	5081.83
	Kentouchsaid (Belle Vue) + Les sept tournants	3466.83
	Benouidane (Fadhila saadane)	25000
Urban Park (1)	Bardo	65000
Peri-urbanpark (2)	Djebel Ouahch	5.000.000
	M'ridj	2.020.000

In the following, we will briefly present two previous surveys among users of public gardens in the city of Constantine on the use and perception of green spaces in Constantine in the years 2016 and 2018.

In 2016: 117 people were interviewed in the different gardens of the city of Constantine (72% men and 28% women).

In 2018: 60 garden users were also interviewed (52% men and 48% women).

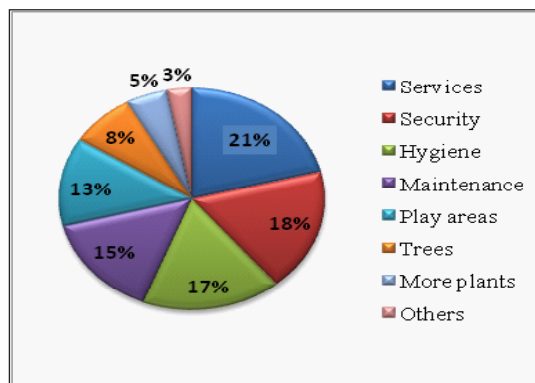
According to **90%** of users, public gardens or more generally green spaces are insufficient in the city of Constantine.



Source: (Boudraa Djamel 2016), (Elbachir 2018)

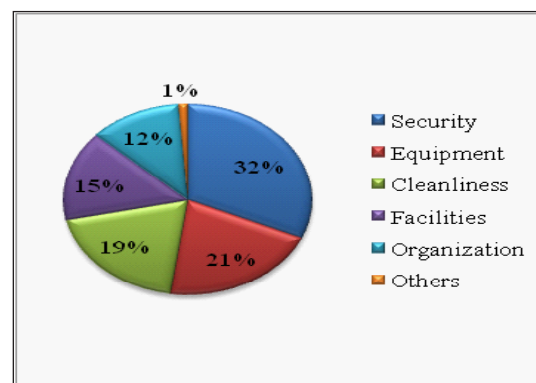
Graph 1. Condition of public gardens

In 2016, most users (78%) said that public gardens were in good condition. However, in 2018, 62% said that these same gardens are in poor condition. This could reflect either a deterioration of the gardens or the fact that users have become more demanding about the conditions of public gardens. (Graph1)



Source: (Boudraa Djamel 2016), (Elbachir 2018)

Graph 2. User proposals for green spaces 2018

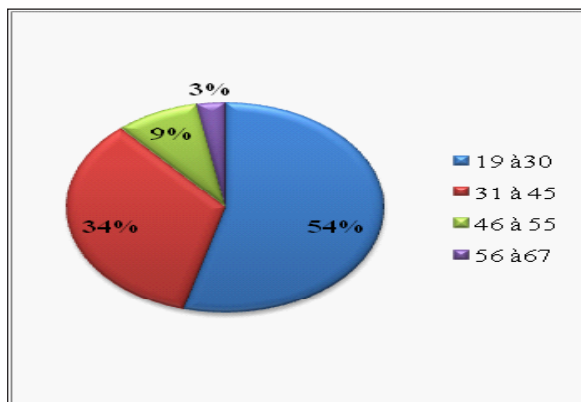


Graph 3. Problems in public gardens 2016

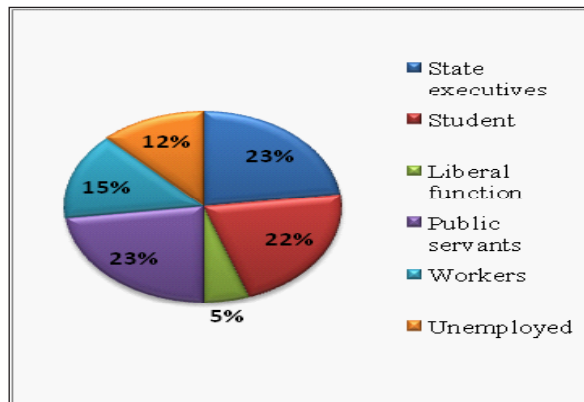
According to the two graphs (2,3) above, the problem of security in the gardens comes first, especially in 2016, as well as the lack of services and facilities.

MATERIALS AND METHODS

In order to know, on the one hand, the frequentation and use of urban and peri-urban green spaces in Constantine and, on the other hand, to evaluate the existing green spaces from the point of view of the users or inhabitants of Constantine, we carried out an online survey with 70 people representing their households, thus a total of 413 people (the average size of the family in Algeria is about 5.9 people). The sample is composed of 24.9% men and 75.1% women, belonging to all age groups, but also to all socio-professional classes, as shown in the graphs (4, 5) below.



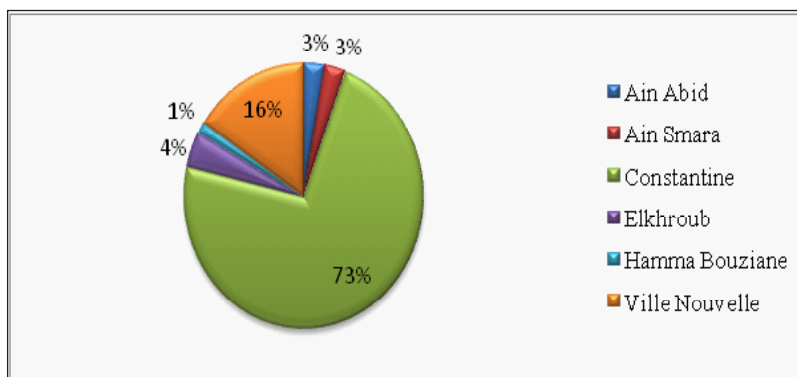
Source: online survey April 2022, by M.BENMECHICHE
Graph 4. Age categories of respondents



Graph 5. Socio-professional categories of respondents

RESULTS AND DISCUSSION

In terms of Geographical origin of respondents (graph6), the majority of responses came from the city of Constantine (73%), which is the capital of the Wilaya, against 16% for the new city of Ali Mendjeli, 4% for the city of Elkhroub, 3% for Ain Smara and 3% for Ain Abid.



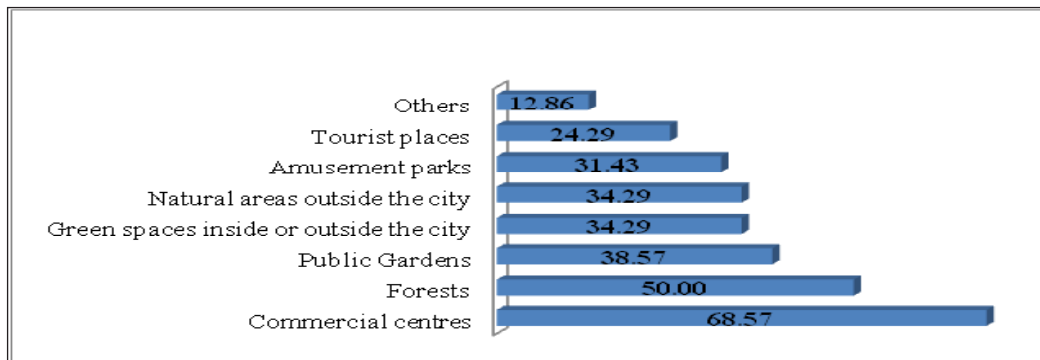
Graph 6. Geographical origin of respondents

Evaluation of the Use and Perception of Green Spaces in Constantine

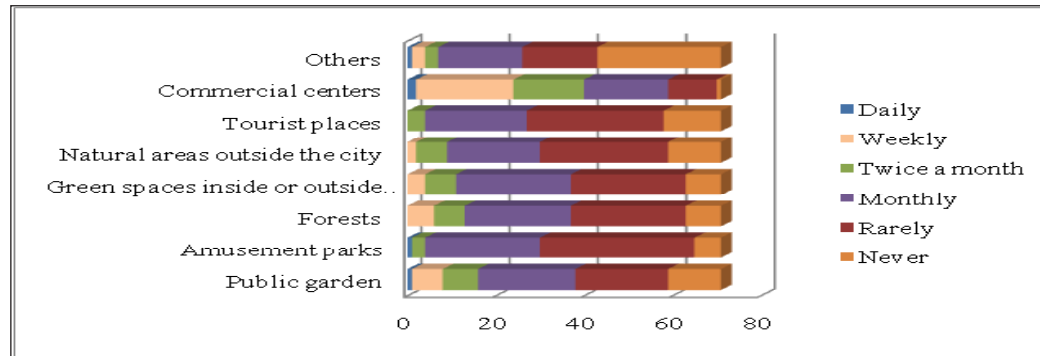
Without recalling the importance of green spaces, widely explained before, we wanted to know, first of all, what are the entertainment practices of the population of Constantine, and the share of green spaces among their leisure destinations.

Places of Leisure Frequented by the Inhabitants of Constantine

According to the graph7 below, people entertain themselves most in shopping centres (68.57%), which most often have playgrounds for children and adults. The second most popular destination is the forest (50%), followed by public gardens (38.57%), natural green areas inside and outside the city (34.29%). Other places mentioned by the respondents are: the beaches, the old town of Constantine, the equestrian centre, the lakes, the dams, the Zenith theatre and the cultural centre.



Graph 7. What kind of places of leisure do you frequent

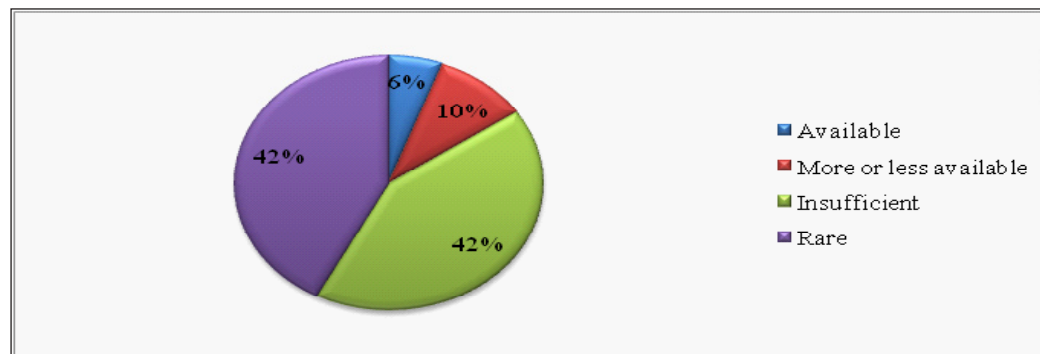


Graph 8. Frequency of use of recreational areas

A cross-reading of the data shows, on the one hand, that people generally use the different spaces rarely (34%) and monthly (32%), as shown in the graph8 above. Daily and weekly attendances are the lowest, at 1% and 8% respectively. On the other hand, commercial centres are often visited once a week, daily and once a month, in contrast to other destinations which are visited much more once a month or occasionally.

The Inhabitants' Perception of the Availability of Green Spaces

According to the survey results (graph9), 84% of people consider green spaces to be scarce and insufficient, while only 16% consider them to be either available or more or less available. A percentage of 74.6% of people say they usually use green spaces, while 25.4% do not use them.

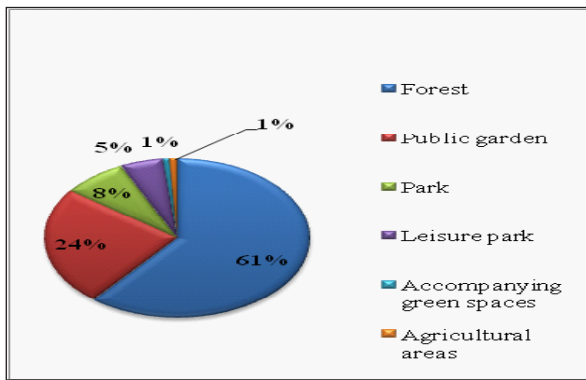


Graph 9. Evaluation of the availability of green spaces as perceived by the inhabitants

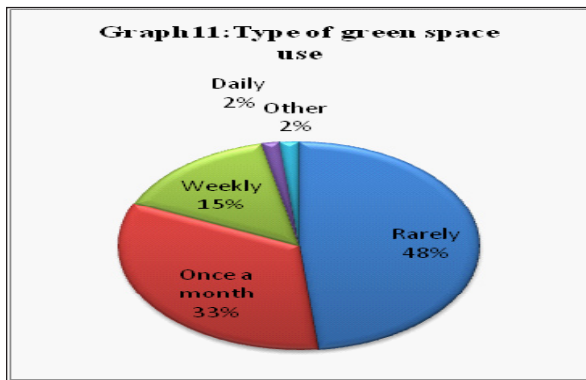
Types of Green Spaces Used in Constantine (Graphs 10, 11)

Natural forest is the most used green space in Constantine, according to 61% of the responses, followed by public gardens (24%), and in third place urban parks (8%). This is explained by the fact that forests, unlike the city's green spaces, are very shaded natural places, open to nature, far from the noise of the city. They are generally visited once a month or rarely.

Almost half of the people surveyed rarely use these green spaces, although 33% use them once a month and 15% use them weekly. Daily use is very minimal, at only 2%. The other types of use are during the holidays, in summer or occasionally.

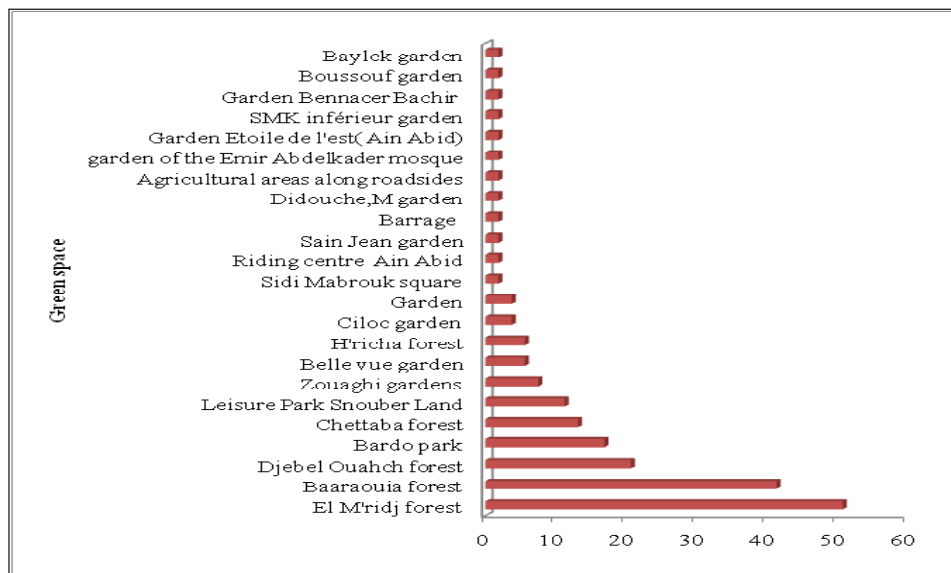


Graph 10. Use of green spaces by type



Graph 11. Type of green space use

The following graph and map show the forests most used by the inhabitants of the city of Constantine. The M'ridj forest, located to the east of the city, is the most used forest by the respondents, followed by the Baaraouia forest, to the south of the city, then the Djebel Ouahch forest, to the north-east of the city. And finally the Chettaba forest, which is located a little further southwest of the city.



Graph 12. The most visited green spaces in Constantine (%)

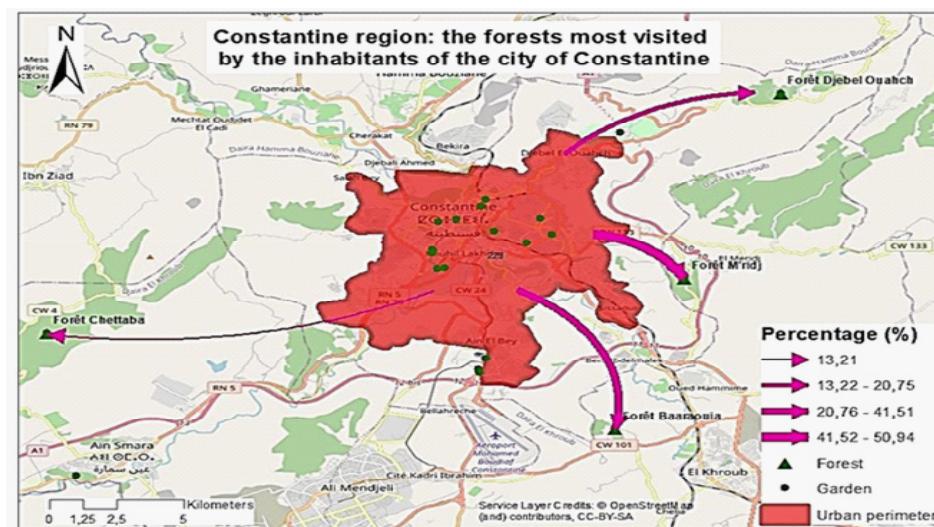


Figure 3. The forest most visited by the inhabitants of the city of Constantine

Objectives of the Use of Green Spaces in Constantine

The main reasons for using green spaces are rest (24%), peace and quiet (18%), play (13%), meeting friends (12%), family reunions (12%), meditation (10%), practising a sport (7%), isolation (4%). More than half of these people (52%) visit green spaces with their family, 35% visit them with friends and 12% alone.

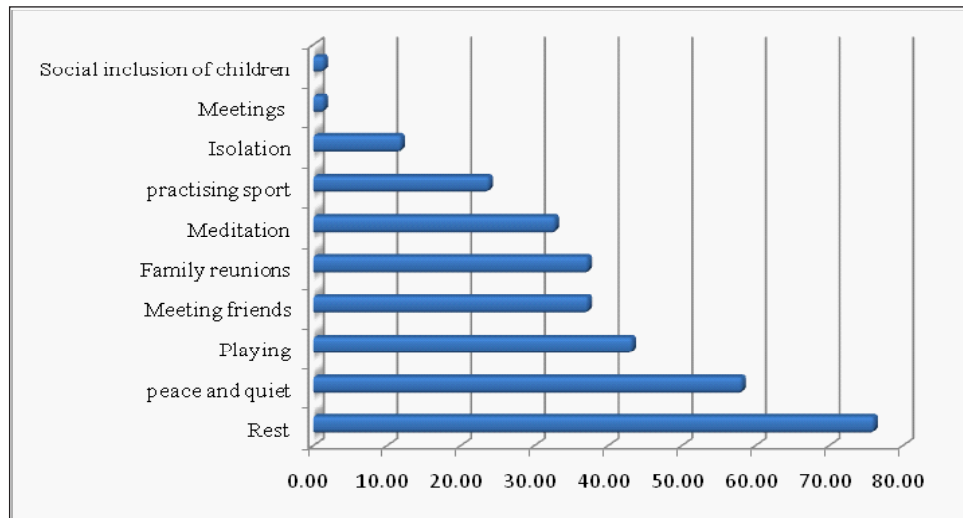
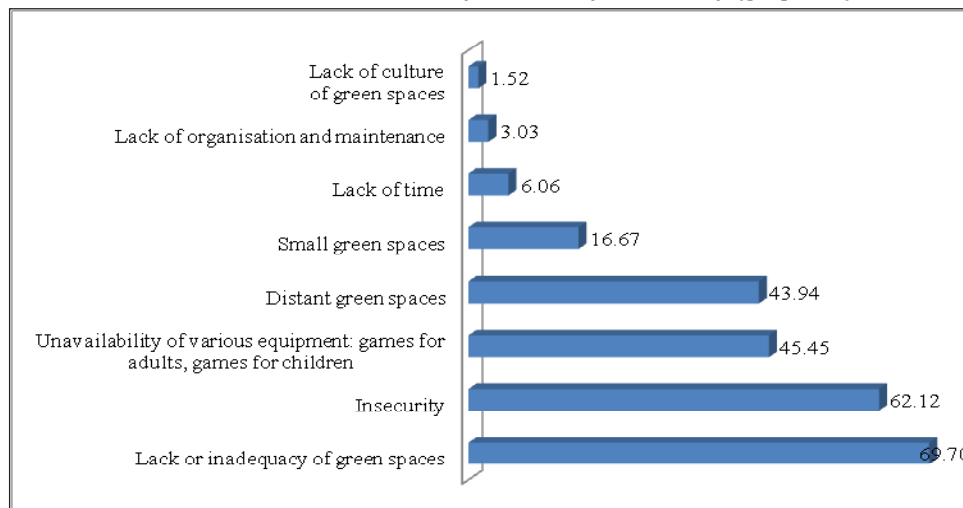


Figure 13. Reasons for visiting the green spaces (%)

Reasons for Not Using Green Spaces

The results of our survey confirm those of previous surveys (2016 and 2018). People do not go to green spaces because they are, first of all, non-existent or scarce and because they essentially lack safety.(graph 14)

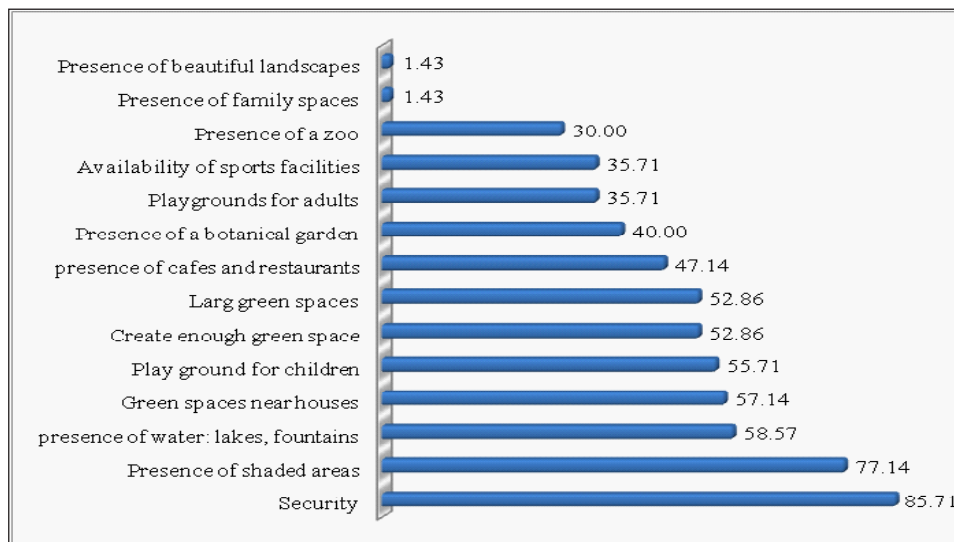


Graph14. Causes of non-use of green spaces (%)

- Lack or unavailability of green spaces (28%)
- Insecurity (25%)
- Green spaces are not equipped or are not well equipped (18%)
- Distance of green spaces from neighbourhoods or places of residence (18%)
- Existing green spaces are small (7%)
- Lack of time (2%)

Factors that Encourage the Use of Green Spaces

The issue of safety in green spaces is again confirmed in the respondents' proposals, and without it, green spaces, even if available, would still be abandoned and unused.



Graph 15. What motivates you to go to green spaces?

- Security (**14%**)
- Presence of shaded areas (**12%**)
- Presence of water: lakes, fountains (**9%**)
- Green spaces near houses or in the neighbourhood (**9%**)
- Playground for children(**9%**)
- Create enough green space(**8%**)
- Create Large green spaces(**8%**)
- Gardens with cafes and restaurants (**8%**)

Proposals to Improve the Use of Green Spaces in Constantine

An open-ended question was asked at the end of the questionnaire, so that respondents could freely express their opinions and proposals for improving the use of green spaces in Constantine. Their proposals included the following:

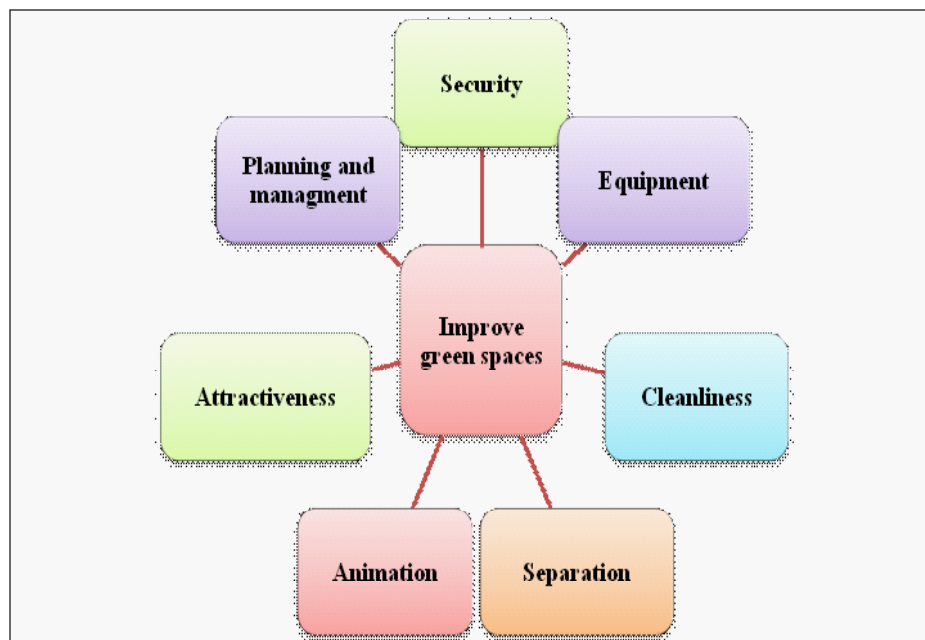


Table 4. Most important proposals to improve green spaces in Constantine

-Security (26.06%): This element, which is at the top of the proposals, is necessary for the regular use and enjoyment of the various green spaces, especially in remote and isolated areas;

-Equipment of green spaces (12.68%): green spaces must be equipped with water facilities, a leisure pool, restaurants, sanitary facilities, a children's playground, urban furniture (tables and benches), etc.

-Cleanliness and hygiene (10.56%):for all green spaces, especially forests

-Greening the city (8.45%): by introducing many green spaces everywhere in the city, even in small areas, and making them denser in each neighbourhood, so that they are close to inhabited areas and can be used on a daily basis, as well as being varied and of different styles, in order to allow people to discover other cultures from around the world: Zen garden, ecological garden...

-Creation and development of green spaces: because the existing green spaces are not worthy of the name, especially in the new town of Ali Mendjeli (8.45%). The green spaces should be well designed and large.

-Separation (4.93%): separation between different types of users: families, young people,

- Animation: it makes green spaces more dynamic by introducing commercial activities and festivities and encourages the practice of sports.

- Transportation: Linking parks to transport for easy access

- Attractiveness: they must meet the needs of all age groups and social categories, so as to be functional and attractive. Spaces for the elderly and disabled.

- Vegetation: plant many trees for shade and choose plant species carefully and ensure that they are varied, giving importance to the landscape aspect and using natural materials like wood.

- Management: green spaces must be well maintained, (install a scientific council of botany) and must be well managed to avoid their degradation, some have even proposed to entrust them to public and private companies to maintain them regularly.

- Planning: planning, creating and managing green spaces must be part of an overall plan that is part of the total planning of the city, and stop thinking that green spaces are secondary elements. And also discourage urban sprawl.

Most of the projects that Constantine has benefited from are squares rather than green spaces, with more concrete than greenery. The green space projects in Constantine are poor in terms of green and blue networks.

- Raising awareness: of the importance and interest of green spaces in our living environment, as many people are unaware of their benefits.

-Participatory gardens: encourage young people to create private green spaces and mini-gardens at a reasonable or symbolic price.

-Protect natural green spaces: give importance to the natural reserve of Djebel Ouahch and maintain it, because it is a natural environment of great value but which is neglected. It is a biological reserve, located north-east of the town of Constantine, with an area of 100 ha, which was classified in 1970. It contains an arboretum on 19 ha and 43 plant species, of which 17 are native and 26 non-native

CONCLUSION

Despite the great importance of green spaces in the urban environment, Constantine, like other Wilayas and cities in the country, still lacks quality green spaces that can interest and accommodate a large public. This situation has meant that gardens and public parks are not the primary entertainment destination for its inhabitants. Instead, shopping centres are the most popular places for entertainment, as they have guarded car parks, playgrounds, restaurants, etc.

Our survey also shows that the most frequented green spaces are peri-urban and rural forests. Forests have ecosystems that need to be protected, and access to them should be limited and regulated to avoid the destruction of natural habitats.

Several reasons also limit the use of public green spaces in Constantine, notably the absence or lack of security, cleanliness and equipment. For this reason, the future management and development of public green spaces should be rethought.

REFERENCES

1. Boudraa Djamel, Seghaoui Ahmed. *Les espaces verts à Constantine : réalité et perspectives*. Constantine: Université Constantine3, 2016.
2. Delavallade, Stéphane. *Gestion et management durables des espaces verts, Construire la ville verte de demain*. Territorial, 2014.
3. Elbachir, Bennini Mohammed. *La gestion écologique des espaces verts, cas de la ville de Constantine*. Constantine: Université Constantine3, 2018.
4. JEAN-BAPTISTE, MARIE. *URBAN CHANGE THROUGH NATURAL SPACES IN THE METROPOLIS*. Parenthèses, 2013.
5. LARCHER Jean-Luc, GELGON Thierry. *Aménagement des espaces verts urbains et du paysage rural : Histoire, composition, éléments construits*. Paris: TEC et DOC, 2012.
6. Manusset, Sandrine. «Impacts psycho-sociaux des espaces verts dans les espaces urbains.» *revue développement durable et territoires* 3, n° 3 (Décembre 2012).
7. Ministère de l'équipement, du logement, des transports et du tourisme. *L'aménagement des espaces verts*. Moniteur, 1991.
8. YUDINA, Anna. *VILLE-JARDINS*. Ulmer, 2017.

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